



The **OHIO** Journal of Teacher Education

Spring 2018. VOLUME 32. NUMBER 1

The **OHIO** Journal of Teacher Education

Spring 2018. VOLUME 32 . NUMBER 1

PUBLISHED BY THE OHIO ASSOCIATION OF TEACHER EDUCATORS

Dr. D. Mark Meyers, Xavier University
EDITOR

CONTENTS

Message from the Editors	1
Editorial Board	3
A Call for Editorial Board Membership	4
ARTICLES	
Motivation Behind Lesson Planning <i>Robin Dever, Ph.D. Kent State University -- Geauga</i>	5
Pedagogy of a Fable <i>Christopher Meidl, Ph.D, Duquesne University</i> <i>Jordyn Hintz, BA., St. Norbert College</i>	16
<i>Coteaching partnerships during student teaching: Cooperating teachers' professional realizations and growth</i> <i>Elizabeth Testa, Ph.D.,, Kent State University</i> <i>Lisa A. Borgerding, Ph.D., Kent State University</i> <i>Todd S. Hawley, Ph.D., Kent State University</i>	31
<i>Negotiating Between Efficiency and Flexibility: Learning from the Classroom Experiences of Early-Career Elementary Teachers</i> <i>Aaron Zimmerman Ph.D, Texas Tech University</i>	49
<i>Inquiry: How it is Presented During Professional Development at an Informal Science Institution?</i> <i>Gary M. Holliday, Ph.D., The University of Akron</i>	60
<i>Engagement in Secondary Blended Classrooms</i> <i>Lauren Angelone Ph.D, Xavier University</i> <i>Alex Scrimshire, Ph.D.,, Xavier University</i>	74
Publication and Manuscript Guidelines	87
Important Dates of Note	88
Membership	89



A MESSAGE FROM THE EDITOR

Welcome from the The OHIO Journal of Teacher Education Editorial Team. We are honored and privileged to shepherd this journal for the educational community of Ohio

The OHIO Journal of Teacher Education (OJTE) is an online journal. We invite all forms of article formats, as seen in the publication and manuscript guidelines included inside the journal. However, we do invite authors to utilize the online format. The use of links and other interactive devices will allow the online journal to be more than simply a pdf of articles that you can print at your own workstation. In the future, the hope of the editorial team is to develop a truly functional online journal experience which can open the world of practice to our readership.

We will strive to build upon the solid foundation left by the previous editorial teams and move the OHIO Journal of Teacher Education forward as a resource for pre-service teachers, in-service teachers, and all with an interest in teacher education.

Dr. Mark Meyers, Editor





EDITORIAL BOARD

Michele Beery, Ph.D.
Wilmington College

Stacey Pistorova, Ph.D.
Heidelberg University

Cynthia Bertelsen, Ph.D.
Bowling Green State University

Carol Ramsay, Ed. D.
Lake Erie College

Sue Corbin, Ph.D.
*Notre Dame
College of Ohio*

Linda Ingling Rogness, Ph.D.
Muskingum University

Teresa Young, Ph.D.
Xavier University

Joy Cowdery, Ph.D.
Muskingum University

Marlissa Stauffer, Ph.D.
Ohio Dominican University

Todd Hawley, Ph. D.
Kent State University

Nicole Williams, Ph. D.
*University of
Findlay*



A CALL FOR EDITORIAL BOARD MEMBERSHIP

The Ohio Journal of Teacher Education (OJTE) is looking for interested individuals to join the Editorial Board of the journal. We are looking to establish a board that represents the Colleges and Universities of Ohio as well as offers a broad spectrum of content expertise.

If interested, please submit a one page letter of intent that includes your College or University, your educational background, and your content area of interest to the co-editors.

Dr. Mark Meyers at
oatejournal@gmail.com

We look forward to hearing from you.

Motivation Behind Lesson Planning

Robin Dever, Ph.D...

* Correspondence:

Robin Dever, Ph.D.
Kent State University-
Geauga
14111 Claridon-Troy Road
Burton, OH 44021

Rdever2@kent.edu

Full list of author
information is available at
the end of the article

Abstract:

Determining what to teach and how to teach it is an integral part of any teacher's job. Teachers can use a variety of sources when creating their plans, including the Internet, colleagues, textbooks and curriculum materials, and prior experiences, such as their methods courses. The purpose of this study was to examine the sources first-year teachers use when creating their lesson plans and more specifically to determine whether or not ideas and materials presented in methods courses were among them. The results can help teacher educators improve the preparation teacher candidates receive in the process of lesson planning.

Introduction

First-year teachers have much to balance when setting up their classrooms, establishing routines and procedures, learning the culture of a new building, forming relationships with colleagues and administrators, and deciding what to teach each day. During their years in a teacher preparation program, teacher candidates are taught countless educational theories upon which to base their lesson plans. In addition, professors model best practices in their respective content areas to demonstrate how to plan effective lessons. Throughout their preparation programs teacher candidates write numerous lesson plans, often in-depth and very detailed, taking into consideration all aspects of their students and classroom. Once teacher candidates graduate and move on to their own classrooms, they are required to use the information they learned about lesson planning and put it into practice on a daily basis. Although teacher educators may believe that first-year teachers use the theories and practices they taught in their courses, they may wonder whether first year teachers actually use what they learned in their methods courses with regard to developing lesson plans.

Thus, two research questions motivated this study:

1. What resource (textbook, Internet, colleague, prior experience, or self-created) do first-year middle school teachers most use when creating their lesson plans?
2. Do first-year middle school teachers use the methods learned in their teacher preparation programs when developing their lesson plans?

This study was designed to answer these questions in order to inform teacher educators about how best to prepare future teachers for the realities of lesson planning once they obtain their first teaching position.

Review of the Literature

Lesson planning is a major part of any teacher's job. With regard to creating plans, teachers have a wide variety of resources to use as a foundation. When preparing teacher candidates to write lesson plans, teacher educators must consider the availability and use of these resources and prepare candidates to use them effectively; however, knowing the extent to which they actually do so requires research into the way in-service teachers use resources to plan lessons.

Several proposed models suggest a format for teachers to follow when creating lesson plans. The first of these is an objectives first model known as the Tyler (1950) model, widely seen as the accepted foundation of curriculum planning. Similar models followed, such as that of Hunter (1982), who recommended the following steps: establishing focus, stating objectives, modeling, and guided practice. Clark and Yinger (1980) also created a model closely resembling previous models and focusing on three steps, including using objectives and content to create an acceptable activity, followed by elaborating and implementing the activity.

Despite these elaborate curriculum planning models and the notion that in theory they make sense, teachers rarely use the objectives-first approach as outlined (John, 2006; Kagan & Tippens, 1992; Sardo Brown, 1988; Zakis, Liljedahl, & Sinclair, 2009). Instead, they consider a variety of other factors, the most often cited of which is the need to fill time (Kagan & Tippins, 1992; Leinhardt, 1983; Sullivan, Clarke, & Clarke, 2012); in fact, 81% of teachers base their lesson plans on activities instead of objectives (Clark, 1978).

Fifty-two percent of teachers in one study reported choosing activities as the center of their lesson plans in contrast to objectives or official curricula (Sullivan, Clarke, & Clarke, 2012); the choice of these activities is influenced by the physical space, use of resources, and curriculum materials (Brophy, 1982).

In addition, teachers consider their students when designing lesson plans, especially their students' ability (Borko & Niles, 1987). Other affective considerations include their students' moods, gender, self-concept, and work habits (Sardo Brown, 1988; Shavelson & Stern, 1981); furthermore, some novice teachers use their students' prior knowledge and interests as a main consideration in lesson planning (Ball, Knobloch, & Hoop, 2007).

First-year, or novice, teachers face many challenges. As they navigate learning the daily operations of a classroom, they also learn to structure planning around many contributing factors. At the beginning of their teaching experience, they tend to rely on textbooks as their primary source of lesson planning (Warren, 2000). One study showed that 85–95% of activities used in math and reading classrooms were based on a textbook (McCutcheon, 1980). In addition, 90–95% of all classroom instruction was based on some form of published instructional material (Komoski, 1978). These statistics can be attributed to the growth of sharing websites on which teachers post lesson plans for other teachers to see or purchase. As of 2014, one site had a database of 750,000 lesson plans available for download (Hird, Larson, Okubo, & Uchino, 2014). The large number of available lesson plans may reflect quantity, not the quality of the content. Those who borrow the plans must determine their quality and whether or not they can be modified to meet the needs of their students.

Reliance on curriculum materials may wane over the course of the year as first-year teachers learn to navigate other resources (Sardo Brown, 1993). In addition, they may be influenced by memories of their own successful teachers, including instructors in their teacher preparation programs; and imagining themselves as such can drive their planning (Ball, Knobloch & Hoop, 2007; Ryan, 1986; Warren, 2000).

Teacher Education

Teacher preparation instructors have long taught the use of an objectives-first approach to lesson planning and typically require a detailed description of objectives, procedures, assessments, and modifications; however, teachers do not follow these plans as

they were taught in their teacher preparation programs (Ball et al., 2007; Clark & Yinger, 1980). In fact, participants in one study ridiculed their teacher preparation instructors for teaching them a lesson plan format that was impractical and unrealistic (Ball et al., 2007). Kagan and Tippins (1992) argued that lists of materials and objectives should not be required because they are often found in resource materials or textbooks used by teachers and are redundant when required in a lesson plan. Participants in their study also reported that including assessments in a lesson plan conveys a message that all assessments are formal and should take the form of a test or worksheet, which is often not the case.

Participants

This study involved four first-year middle school teachers, all of whom had graduated from a traditional teacher education program before obtaining their first teaching position in a school district.

Teaching in a building housing Grades 3–12, George was a seventh-grade science teacher in the rural school district where he had studied as a child. Approximately 1,000 students were enrolled in the district, and he was the only seventh-grade science teacher.

Susan was a sixth-grade language arts teacher in the rural school district where her children were enrolled. After graduation from her teacher preparation program, she had worked in another district as an aide for a student in special education. Susan was the only sixth-grade language arts teacher in her district.

Julie was a sixth-grade mathematics teacher in a building housing Grades 6–8 in a rural school district with approximately 1,700 students. Her district had mandated a scripted curriculum for all math teachers and eliminated hardbound textbooks in favor of online textbooks. Students were given a code to access their textbooks online both at home and in the classroom.

Tim was a Grades 5 and 6 science teacher in a small-town school district enrolling approximately 500 students. The building in which Tim taught housed Grades PK–12 and was organized around the schools-within-a-school model. Tim taught in the middle-school section of the complex, which housed Grades 5–8. He was the only fifth- and sixth-grade science teacher in his district.

Data Collection

Data gathered over a three-month period comprised lesson plans the teachers had coded to designate what resource they used to create each one. Submissions were analyzed for the codes, not content. The coding system, created by the researcher to ensure consistency among participants and to allow them to mark their plans quickly, included the following:

1. This plan was found on a website on the Internet.
2. This plan was found in a textbook or resource book I am using in my class.
3. This plan was given to me by a colleague.
4. This plan was based on a prior experience, such as something I used in my teacher preparation program or in my experience as a middle-school student.
5. This plan was self-created without consulting other sources.

Teachers were instructed that they could use multiple codes for a single lesson plan if more than one were applicable. Once they applied the numerical codes and submitted their plans, they were categorized based on the code; then a frequency table was created.

Results

A total of 298 codes were reported, derived from 178 different lesson plans. The number of lesson plans varied by participant because some taught in more than one grade level per day, resulting in more lesson plans for the same time period than others who taught a single lesson plan multiple times a day. Participant submissions were as follows: George (N=29), Susan (N=43), Tim (N=144), and Julie (N=79).

Participants' codes were converted into percentages to reflect the unequal number of submissions per participant. These percentages are shown in Table 1. The overall percentage totals for the entire data set are shown in Figure 1.

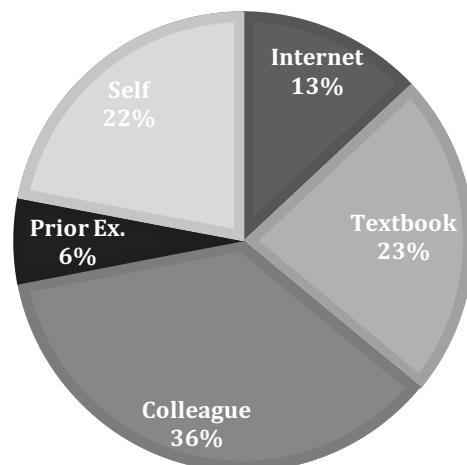
Table 1

Participant Sources for Lesson Plans

	Internet	Textbook	Colleague	Prior Experience	Self
George (N=29)	15 (52%)	2 (7%)	3 (10%)	0 (0%)	9 (31%)
Susan (N=43)	5 (12%)	12 (28%)	9 (21%)	6 (14%)	11 (26%)
Julie (N=79)	0 (0%)	44 (56%)	33 (42%)	0 (0%)	2 (3%)
Tim (N=144)	19 (13%)	7 (5%)	62 (43%)	11 (8%)	45 (31%)

SOURCES

■ Internet ■ Textbook ■ Colleague ■ Prior Ex. ■ Self

*Figure 1.* Total percentages of source of lesson plans.**Discussion**

Data were examined in order to answer the two research questions of this study. The answer to the first question—What resource (textbook, Internet, colleague, prior experience, or self-created) do first-year middle school teachers use the most when creating their lesson

plans?—was determined by examining the percentage of lesson plans that teachers reported originating from various sources.

Of all lesson plans submitted, the largest percentage came from the first-year teachers' colleagues. Because of the time constraints and stress a first-year teacher faces, this fact was unsurprising. First-year teachers can be overwhelmed, so they often turn to colleagues as a primary source for lesson planning. Because experienced teachers have already gone through the trial-and-error phase of lesson planning, they are able to pass along “tried and true” lesson plans to novice teachers (Kagan & Tippins, 1992).

In addition to depending on colleagues for lesson plans, first-year teachers rely heavily on textbooks when compared to other sources. Textbooks include many resources for teachers to use in conjunction with the text. These resources are readily available, already correlated to the content material and standards, and require little to no preparation on the part of the teacher. As with obtaining lesson plans from colleagues, a new teacher can be tempted to rely on these resources to counterbalance the pressure of having to create new lesson plans for each day. In the case of Julie, who taught mathematics, the school district mandated that she follow a teacher-scripted textbook program, allowing for little to no deviation on the teacher's part from the scripted material. This factor may explain why so many of Julie's lessons were from the textbook (56%), the remaining from a colleague (42%), and none from outside sources. Her situation was in stark contrast to that of Susan, who taught language arts and used excerpts of text acquired from sources outside the traditional basal reader for her lessons. This required her to generate her own lesson plans because she did not use a traditional textbook, a fact reflected in the 26% of her lesson plans that were self-created.

Of all the lesson plans, 22% were reported as created by the teacher alone; however, closer examination of the data showed that all but six of the 67 codes designating self-created lesson plans accompanied another code. For example, one lesson plan was coded as based on the textbook as well as self-created, indicating that the core of the lesson was a textbook resource, but the teacher modified it using his or her own knowledge and ideas. Of the six that were solely self-created, these were either review activities for a test or writing prompts to which students responded. This would indicate that teachers are not creating entirely new lesson plans on their own. Except for these few outliers, first-year teachers were resourceful in creating lesson plans.

The least reported source was teachers' prior experiences, a result resembling that of Glick, Ahmed, Cave, and Chang (1992), who found that none of their participants had cited using materials or ideas from an education methods course. Experienced teachers reported that most of their lesson plans were the result of making modifications to plans after executing them; however, novice teachers do not have this type of experience to draw upon and must look to other past experiences for inspiration while creating lesson plans. These experiences tended to be either lessons they had observed during their methods courses or lessons their teachers had taught them during their own K–12 experience. Although methods courses typically focus on education theory and demonstrate best practices for individual content areas, they cannot provide the basis for all possible lesson plans; however, many methods and techniques that teachers can use as a basis for future lessons are modeled in these courses. Whether these techniques influenced the lesson plans in any way or whether the teachers had not reported them as based on prior experience—if they were not presented exactly as in methods courses—remains unclear from the data.

The data were further analyzed to answer the second research question: Do first-year middle school teachers use the methods learned in their teacher preparation programs when developing their lesson plans? The answer to this seems to be inconclusive without additional data. At first glance, the participants reported that a low number of their lesson plans (6%) were based on prior experiences. These teachers may not have applied methods and techniques they were shown in their methods courses; however, closer examination of the data showed only two of the 17 lesson coded as based on prior experiences were marked with only this code. The remaining 15 were coded in conjunction with another source, most commonly paired with a code indicating a colleague's influence. The two lesson plans that were solely coded as based on prior experience were lab experiences that Tim planned. This could have been a lab experiment he completed during his methods course or any other science course. The data did not specify where he had previously seen it performed.

The underlying theories and foundations discussed in methods courses were not reported as influences, only concrete lessons that had been modeled. Although a teacher did not report that a lesson was based on one she or he witnessed in a methods course, the lesson may have exhibited characteristics of these foundations in some respect in the lesson.

Limitations

The researcher recognizes that this study had several limitations that affect its generalizability. The first of these is the small sample size. Second, all participants taught in small, rural communities with small student body populations. Most of the teachers were the only content area teacher for their grade level, which may have limited the level of resources they were able to gain from colleagues teaching the same content on the same grade level. Finally, one participant was required to use a scripted curriculum and was directed not to deviate from its content, limiting her use of other sources outside of the textbook.

Future Research

Using this research as groundwork, future researchers could investigate content area as a factor in how teachers plan lessons. For example, in textbook-heavy areas, such as mathematics, do teachers rely less on outside sources than teachers in areas such as science, where lessons tend to be less textbook centric and more hands on? In addition, the way teachers find sources for lesson planning may differ in large school buildings with multiple colleagues who teach the same content in the same grade; an examination of such a phenomenon would be helpful. Finally, future researchers can expand on the five categories of codes used in this study to include environmental impacts, such as district mandates, schedule and organization, and student demographics to explore more in-depth influences.

Conclusion

Lesson planning has changed over time: The use of the Internet, focus on student-centered methods, and the need for differentiation have shifted the process of lesson planning from solely relying on a single source, such as textbook, to incorporating multiple sources.

First-year teachers rely less on textbooks and more on colleagues as sources of materials. The implication for teacher education programs is a potential shift in how teacher candidates are taught to plan lessons. Conversations on how to take an existing plan either given to a teacher by a colleague or found on the Internet, how to evaluate it to fit the needs of a specific classroom, and how to make the necessary modifications need to occur more frequently in methods courses because this is the reality of lesson planning for novice teachers

References

- Ball, A. L., Knobloch, N. A., & Hoop, S. (2007). The instructional planning experiences of beginning teachers. *Journal of Agricultural Education*, 48(2), 56–65.
- Borko, H., & Niles, J. (1982). Factors contributing to teachers' judgments about students and decisions about grouping students for reading instruction. *Journal of Reading Behavior*, 14(2), 127–140.
- Brophy, J. E. (1982). How teachers influence what is taught and learned in classrooms. *Elementary School Journal*, 83(1), 1–13.
- Clark, C. M. (1978). Teacher planning study described. *Communication Quarterly*, 1, 1–4.
- Clark, C. M., & Yinger, R. (1980). *The hidden world of teaching: Implications of research on teacher planning* (Research Series 77). East Lansing, MI: Institute for Research on Teaching.
- Glick, J. G., Ahmed, A. M., Cave, L. M. & Chang, H. P. (1992). *Sources used by student teachers in lesson planning*. Paper presented at the meeting of the National Science Teacher Association, Boston, MA.
- Hird, M., Larson, R., Okubo, Y., & Uchino, K. (2014). Lesson study and lesson sharing: An appealing marriage. *Creative Education*, 5(10), 769–779. doi: 10.4236/ce.2014.510090
- Hunter, M. (1982). *Mastery teaching*. El Segundo, CA: TIP Publications.
- John, P. D. (2006). Lesson planning and the student teacher: Re-thinking the dominant model. *Journal of Curriculum Studies*, 38(4), 483–498. doi: 10.1080/00220270500363620
- Kagan, D. M., & Tippins, D. J. (1992). The evolution of functional lesson plans among twelve elementary and secondary student teachers. *The Elementary School Journal*, 92(4), 477–489.
- Komoski, P. K. (1978). The realities of choosing and using instructional materials. *Educational Leadership*, 36(1), 46–48.
- Leinhardt, G. (1983). *Routines in expert math teachers' thoughts and actions*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada. Retrieved from ERIC database (ED234980)
- McCutcheson, G. (1980). How do elementary school teachers plan? The nature of planning and influences on it. *The Elementary School Journal*, 81(1), 4–23.
- Ryan, K. (1986). *Induction of new teachers*. Bloomington, IN: Phi Delta Kappa Educational Foundation.
- Sardo Brown, D. (1993). Descriptions of two novice secondary teachers' planning. *Curriculum Inquiry*, 23(1), 63-84.

- Sardo Brown, D. (1988). Twelve middle-school teachers' planning. *The Elementary School Journal*, 89(1), 69–87.
- Shavelson, R. J., & Stern, P. (1981). Research on teachers' pedagogical thoughts, judgments, decisions, and behavior. *Review of Educational Research*, 51(4), 455–498.
- Sullivan, P., Clarke, D. J., & Clarke, D. M. (2012). Teacher decisions about planning and assessment in primary mathematics. *Australian Primary Mathematics Classroom*, 17(3), 20–23.
- Tyler, R. (1950). *Basic principles of curriculum and instruction*. Chicago, IL: University of Chicago Press.
- Warren, L. L. (2000). Teacher planning: A literature review. *Educational Research Quarterly*, 24(2), 37.
- Zazkis, R., Liljedahl, P., & Sinclair, N. (2009). Lesson plays: Planning teaching versus teaching planning. *For the Learning of Mathematics*, 29(1), 40–47.

Author:

Robin Dever, Ph.D.
Kent State University- Geauga
14111 Claridon-Troy Road
Burton, OH 44021
440-834-3720 (office)
Rdever2@kent.edu

Robin Dever is an assistant professor and program coordinator of middle childhood education at Kent State University-Geauga in Burton, OH. She also serves at the International Baccalaureate Middle Years Programme (MYP) coordinator for KSU. Her research interests include middle childhood teacher education and professional development. Robin is the former President of Ohio Middle Level Professors and currently serves on the Board of Directors.

Pedagogy of a Fable

Christopher Meidl, Ph.D., and Jordyn Hintz, B.A.

* Correspondence:

Christopher Meidl, Ph.D.

Duquesne University

4127 Murray Avenue

Pittsburgh, PA 15217

E-mail address:

meidlc@duq.edu

Full list of author

information is available at
the end of the article

Abstract:

Fables are stories intended to imbue a moral lesson. The research guiding this investigation explored how kindergarteners perceived the moral of a fable as compared to a preservice teachers intended goal. Case study framed the methodology, with participants consisting of 20 kindergarteners. The fable The Lion and the Mouse was told orally in a whole group setting using 3 puppets. The kindergartners completed an assessment with multiple-choice, T/F, and drew a picture. Through the drawings, students demonstrated personal connections with the story. Three themes emerged from the data: social constructs, social justice, and social competency.

Introduction

Fables are a time-honored format for story telling with the intent to develop moral and ethical thinking. Aesop wrote a collection of over 725 fables dating back to 6th century BCE. These fables served many purposes: 1) as a means for entertainment, 2) to teach moral understanding infused with reading and writing instruction, and 3) to promote self-reflection of moral situations (Horgan, 2014). A key feature of Aesop's fables was that they often included an animal or animals that displayed human like qualities. Traditionally, fables were passed down orally from generation to generation (Horgan, 2014).

As time passed, fables were written into traditional pieces of literature, often still delivered through oral storytelling (Dixon, 2014). With regard to their place in classroom instruction, Detlor (2001) states that fables can help build moral development, contribute to a strong classroom community, facilitate the understanding of metaphors and can help with translating ethical issues into real life situations.

. In more recent times, colorfully illustrated stories and/or multiple variations and adaptations of traditional fables contribute to the continued utilization of moral themes from fables to teach children. Educators are left wondering how children interpret the morals of the stories they present children with as part of class instruction.

Building Literacy and Understanding Metaphors

In early childhood education, a common form of literacy instruction occurs through “read-alouds.” Often, read-alouds occur daily as a means to develop alphabetic understanding, phonemic awareness, fluency, and comprehension skills. Stories, fiction and non-fiction, help children to understand the world around them and learn essential skills needed to read and write (Im, Parlakian & Osborn, 2007). Fables have a particular style and rhetoric that often allow children to connect with the story.

Fables have distinct structures and patterns that push children to think critically and challenge them to use higher level thinking skills, lending them to be “good fits” for read-alouds (Detlor, 2001). According to Detlor (2001) fables help children’s ability to interpret metaphors, make inferences or judgments, and create and evaluate different solutions to a problem. Being able to understand children’s ability to inference is important as a means to create moral thinking.

Vosniadou & Ortony (1983) examined whether or not young children would be able to distinguish between meaningful and non-meaningful comparisons. Children were presented with word (A) to compare with word (B). They were instructed to either compare the two words literally (BL), metaphorically (BM) or anomalously (BA). Example, for the word “River”

children could either choose, a river is like a lake (BL), a river is like a snake (BM), or a river is like a cat (BA).

They hypothesized that younger children would choose either literal or metaphorical comparisons over anomalous ones. Data proved their hypothesis to be true; however, four year olds were able to distinguish between categorical and metaphorical features. This indicated that they understand that literal and metaphorical comparisons belong to different conventional characteristics of a word (Vosniadou & Ortony, 1983). These results indicated that because children understand both a literal and metaphoric context the use of fables actually provided young children the opportunity to generate meaning from these complex concepts. Fables push students to simultaneously utilize literacy understanding and sometimes inferences, but the question becomes whether that transfers to more ethical and moral concepts in fables.

Ethical Moral Development and Relationship to Real Life

Moral lessons meant to help us understand social, psychological, and inter-relational concepts are the foundation of a fable. In a classic fable, the main character is faced with a moral dilemma that they must solve. Children connect naturally to stories that are relatable to their own lives and contexts of ethical decision-making, as well as the plots and characters in those stories. It is important for teachers to facilitate connections between children's prior experiences and the dilemma presented in the fable. If there is no real life application, the child may not understand the message and the moral lesson will be lost.

Prior knowledge and individual differences among children are said to contribute to their overall comprehension of the theme of a moral story. Children whose schemas are not as developed will remember less of a story than those who have more developed schemas. Narvaez, Gleason, Mitchell, & Bentley (1999) investigated differences among third and fifth graders

ability to extract the theme from a moral story. They analyzed responses from 50 third graders and 54 fifth graders. The study controlled for children's overall literacy fluency and comprehension so that poor moral story comprehension skills could not be attributed to their overall literacy difficulties. Their predominant finding was that reading moral stories aloud to children alone does not guarantee moral theme comprehension. The researchers attribute children's inability to grasp overarching themes to their preoccupation with small irrelevant details.

Moral theme comprehension requires something beyond general reading comprehension. Narvaez (2002) explains that children can often summarize a story, but not necessarily get the "point" (p. 162). Continuing she explained, "Instead of acting as a virus and spreading easily among those exposed, receiving moral messages turns out to be more like the game of 'telephone,' in which one person whispers a statement into the ear of the person in the next seat, and the message continues to be whispered to the next person around the circle back to the point of origin" (p. 166). Older children are able to grasp more in order to generalize moral messages or just have difficulty remembering or applying the theme to real life situations. When reading stories, teachers have the task of facilitating real life connections.

Reader Response Theory and Moral Stories

As mentioned previously, older children who have more life experiences will generally be able to relate to the moral of the story better than younger children. Reader Response Theory as described by Rosenblatt (1978) allows the reader to interpret text based the literary style and affect, subjective experience, and psychological and social connections. Focusing on the reactions allows researchers to examine how various readers interpret the literary work. As Iser (1978) emphasized that literary works allow for multiple interpretations, and are meant for

different readers to form their own view. Children's unique interpretations of stories reveal certain aspects about their developmental stage.

Iser (1978) found that children interpreted stories and drew pictures based on personal experiences. When exposed to the same stories and given the same directions, drawings were all uniquely different. Aligned with reader response theory, Narvaez's (2002) work on morals in stories has led her to the assertions that character educators must recognize: 1) "Reading is active," 2) "Readers 'get' different information from a text based on their background (e.g., skills, knowledge, expertise)," 3) "Readers do not necessarily 'get' the information or message the author intends," 4) "Themes can be constructed by the reader but not automatically or easily," and 5) "Moral messages are a special kind of theme the reader puts together that are influenced by reading skills and moral development" (p. 169). Giese (2008) found, that educators who bring in topics of moral and ethical tension have to account for "students' diverse capacities, interests, and identities when they select topics, texts, and instructional strategies" (p. 203). Moral stories often require teachers to make sense of students interpretations of stories, guiding them through themes with aspects related to social justice and moral decision-making.

Critical literacy provides a lens for how and young children interpret text related to moral and social justice issues. Phillips (2012) explains how storytelling workshops were "interaction with the story occurred in small group activities where the children explored the stories through drawing, sculpting/building, dancing and developing social actions to redress injustices" (p. 144). Included in the data collected was from children was what concerned them, what they considered to be "just or fair," how the characters acted (p. 145). Chafel, Amy, Hammel, and Kathleen (2007) discuss critical literacy as providing the opportunity where teachers allow, "children the freedom to express themselves and weave life experiences into learning, while

seriously addressing issues of social justice, equity, and diversity in developmentally appropriate language” (p. 74). Children must be exposed to the process of developing a critical lens in order to be invested in thinking for social justice.

A great deal of research explores preservice teachers’ intent for delivering literacy instruction, but there are limited amounts of studies that explore young children’s understanding of stories meant to teach about positive character, morals, or social justice. The purpose of this study was to understand how young children, kindergartners, interpret the moral lesson of a fable as compared to the intended goals of a preservice teacher. The research question guiding this study was how would children use illustrations to demonstrate their interpretation of the moral of the story “The Lion and the Mouse?”

Methods

Participants

Participants consisted of twenty kindergarten students from a public elementary school in the Midwest. One of the children had been identified on the Autism Spectrum. The school’s population primarily consisted of middle class, Caucasian students.

Design

This phenomenological research explored how kindergartners perceive the moral lesson of a fable as well as their overall comprehension of the fable. Children were read aloud the fable “The Lion and the Mouse” and administered a short assessment to evaluate their comprehension of the fable.

The fable that was read aloud to the kindergartners was titled “The Lion and the Mouse.” This fable was chosen because it was short in length, yet had a powerful moral. In the fable, a large sleeping lion wakes up to a small mouse scampering by. The lion glares at the tiny mouse

and grabs it with his large paw. The mouse is very frightened and begs the lion to let him go. The lion asks, “Why should I let you go?” The mouse replies, “I am just a little mouse, but I can be a good friend to you.” The lion laughs, wondering how such a little mouse could be a good friend to him. The lion ends up letting the mouse go. A couple days pass when the mouse hears a very loud roar. The mouse hurries along to investigate and finds the lion trapped in a big net by hunters in the forest. Eventually, the mouse nibbles through the net and sets the lion free. The lion allows the mouse ride on his back, and from that day on the two become the best of friends.

Procedure

After the creation of the tool for data collection, designed with developmentally appropriate practice (Copple & Bredekamp, 2009) in mind consent and assent was gathered. One researcher went to the classroom and told the fable to the kindergartners. To make the story more interactive and engaging, three puppets (e.g.: a small mouse, a lion, and a lion trapped in a net) were used when reading the story. Directly after the fable was performed, students returned to their desks and were administered the assessment. Following the assessment, the researcher discussed each child’s drawing with them to distinguish what they were trying to depict in the drawing. Quotes of students explanation of their drawing were written down verbatim directly on their picture.

Assessment as a Form of Data

The assessment protocol consisted of three different parts. The first was using developmentally appropriate multiple-choice questions designed to measure comprehension of the story. Responses were presented as words as well as pictures of the characters. The next question asked the students, “Do you think people or animals that have differences can be friends,” children could respond by either circling “yes” or “no.” In the final portion of the

assessment, children were instructed to draw what they thought the most important part of the fable was. They were not told what to draw, but were told to make their drawing as detailed as possible. After the children finished drawing, they dictated to the researcher what was happening in their drawings.

Data Analysis

Malchiodi (1998) explains using a phenomenological approach to understand children's drawings puts an, "emphasis on an openness to a variety of meanings, the context in which they were created, and the maker's way of viewing the world" (p. 35). Further more, "Children use art to link their experience of the outside world with the inner-self, helping them to discover and affirm themselves and their relationships to people, environment, and even society" (p. 37). As a researcher using a phenomenological perspective, the drawings were interpreted for, "cognitive abilities, emotional development, interpersonal skills, and developmental maturity" (p. 37).

Results

From the data various Analysis of the question asking students to identify the two main characters, every student chose the correct answer, the lion and the mouse. In question two, where students were asked, "Do you think people or animals that have differences can be friends," 17 out of the 19 students in the classroom chose "yes." Although, two of the 19 had originally circled "no" (which was the incorrect answer based on the story), they then changed their answer to "yes." This might have been influenced by them genuinely changing their mind or possibly looking on in comparison with peers' responses, which were different from their own. See Figure 1.

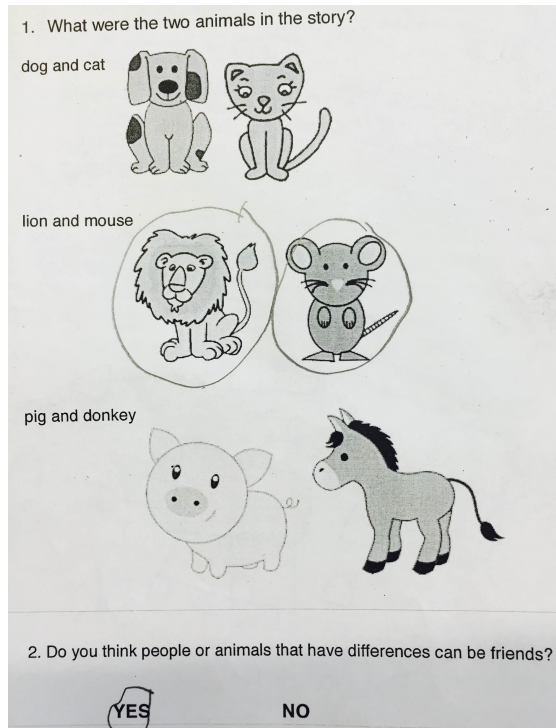


Figure 1

Structure of the closed ended section of the assessment tool. The intent was to gather data from the kindergarteners about comprehension using a form of elicited response.

The final portion of the assessment tool required students to illustrate what they thought was most important from the fable. After each child had finished their illustration, a discussion was had with each student in regards to what they drew. Using student dictation, direct quotes from the students were recorded alongside the corresponding illustration. This was done in order to gain additional insight before interpreting each student portrayal in their illustration regarding *The Lion and the Mouse* fable. When looking at the illustrations from the kindergartners, all of them added extra details in the surrounding environment that were not mentioned when the fable was told. This relates to Narvaez (2002) explaining readers understand moral decision-making and interpretations based on personal experience. Some of these extra details included, grass, trees, the sky with sun and clouds, a cave, two waterfalls, and some students even included animals that might be in a similar environment such as monkeys. One kindergartner described, “The lion is caught in the net, and the mouse is coming to the rescue.” See Figure 2. When talking to the students about what they had drawn in accordance to what they thought was an

important lesson of the fable, three themes emerged in the coding process. Themes consisted of social justice, social constructs and context, and social competency. Social justice was infused as five students drew the mouse helping the lion get free from the net. In these five drawings, there were no other characters. See Figure 2.

Social constructs and contexts occurred as students labeled characters within the story. Another group of five drew something similar, the mouse helping the lion; however, there were also “hunters” or “bad guys” in their drawings. These students not only pointed out the injustice of the lion in the net, but also labeled the hunters as “the bad guys.” One student explained, “The mouse helped the lion get out of the net.” See Figure 3.



Figure 3: Several children believed the moral of the story was that you should help people because the mouse helped the lion.

Social competency was evident as students understood how the lion and the mouse became friends. There is a general connection with themes for young children in this story and from Narvaez (2002). There was only one student who specifically drew something and dictated its message as

related to the intended moral of the story. That student's depiction of the story was described as the ending of the story "when the lion and the mouse had become friends!" See Figure 4.



Figure 4
This picture illustrates how friendship emerged from the multiple interactions.

Discussion

Overall, the data collected from this research depicted results showing that students' drawings provided an informative lens to understand how students interpret a story. As Narvaez (2002) describes, "Moral messages are a special kind of theme the reader puts together that are influenced by reading skills and moral development" (Narvaez, 2002, p. 169). The results suggest benefits of drawing and dictation as a worthwhile assessment tool for kindergarten

children. The use of drawings compares to is supported by the work of Chafel, Amy, Hammel, and Kathleen (2007) who discuss platforms for children to demonstrate critical literacy.

The drawings provided data for young children to express their thoughts and ideas, especially when their vocabulary and writing skills are advanced enough to do that. Using dictation about the drawing was also beneficial because it allows for adults to understand symbolic meaning to get clarification on intent portrayed within a drawing. Additionally, this mode of assessment creates an engaged and motivated learning environment. Through the drawings, students were better able to demonstrate thoughtfulness in how they personally created detailed context for the story *The Lion and the Mouse*. “Readers do not necessarily ‘get’ the information or message the author intends” (Narvaez, 2002, p. 169).

The three themes that emerged, social constructs, social justice, and social competency, emphasize how much the children connected sociologically with the story. While students connected to social constructs and justice, few were able to make the larger jump of understanding the greater moral implications from the story. These findings related to the research of Narvaez, Gleason and Mitchell (1999) who attributed children’s inability to grasp a moral theme. From the present data, it was apparent that for the children who drew extra details such as hunters, trees, grass, other animals, etc. creating the aesthetic context was as important as the interactions and moral of the story.

Implications for future research, it would be beneficial to examine whether this type of assessment is beneficial across other grade levels. Conclusions would indicate that the use of students’ drawings and opportunity to orally communicate their thoughts about learning is a tool that can easily be implemented when learning about fables and other aspects of the literacy. As the researcher, I am not fully convinced that my preservice teachers understand some of the

social issues surrounding power and identity mixed within the story. Part of creating assessment has led to the creation of simple tools that validate what was taught rather than demonstrate opportunities for student expression or cognition.

Conclusion

Based on this research question, how do children understand the moral of a fable using drawings to illustrate their interpretation, there apparently is clear indication that students interpret the importance of a story in a variety of ways. As Vosniadou and Ortony (1983) found, this research also supports, formal assessment of students' understanding of the metaphoric implications of a fable is far more complicated than comprehension expectation of programs like Reading First. Similar to Chafel, Amy, Hammel, and Kathleen (2007), the critical literacy skills necessary for children to interpret ethical and moral stories is complex, however drawings and dictation allow for children to demonstrate their interpretation of the story.

References

- Beltchenko, L. (n.d). *The Components of Effective Read Alouds (PowerPoint Slides)*. Retrieved from <http://www.d118.org/district/curriculum/initiatives/components-effective-read-alouds.pdf>.
- Chafel, J. A., Amy, S. F., Hammel, J., & Kathleen, H. P. (2007). Young children, social issues, and critical literacy stories of teachers and researchers. *YC Young Children*, 62(1), 73-81. Retrieved from <https://search.proquest.com/docview/197633415?accountid=10610>.

- Copple, C. & Bredekamp, S. (2009). *Developmentally appropriate practice in early childhood programs, 3rd edition*. Washington, D.C.: National Association for the Education of Young Children.
- Detlor, T. (2001). *Teaching with aesop's fables*. New York, NY: Scholastic Professional Books.
- Dixon, B. (2014). Fables and philosophy. *Teaching Ethics*. DOI: 10.5840/tej201410177
- Giese, C. (2008). *Powerful stories, powerful conversations: Using literature to teach for social justice* (Order No. NR39989). Available from ProQuest Education Journals. (304397419). Retrieved from <http://search.proquest.com/docview/304397419?accountid=10610>
- Holdren, T. (2012). Using art to assess reading comprehension and critical thinking in adolescence. *Journal of Adolescent & Adult Literacy*, 55(8), 692-703. doi:10.1002/JAAL.00084
- Horgan, J. (2014, March). Aesop's Fables. Retrieved October, 2015, from <http://www.ancient.eu/article/664/>.
- Im, J., Parlakian, R., & Osborn, C. (2007). Stories: Their powerful role in early language and literacy. *YC Young Children*, 62(1), 52-53.
- Iser, W. (1978). *The act of reading: a theory of aesthetic response*. Baltimore, MD: John Hopkins University Press.
- Justice, L., Logan, J., Kaderavek, J., & Dynia, J. (2015). Print-focused read-alouds in early childhood special education programs. *Exceptional Children*, 81(3): pp. 292–311.
- Malchiodi, C. (1998). *Understanding children's drawings*. New York, NY: The Guilford Press.
- Narvaez, D. (2002). Does reading moral stories build character?. *Educational Psychology Review*, 14(2), 155-171.
- Narvaez, D., Gleason, T., Mitchell, C., & Bentley, J. (1999). Moral theme comprehension in children. *Journal of Educational Psychology*, 91(3), 477-487.
- Phillips, L. G. (2012). Retribution and rebellion: Children's meaning making of justice through storytelling. *International Journal of Early Childhood*, 44(2), 141-156. doi:<http://dx.doi.org/10.1007/s13158-012-0053-2>.
- Rosenblatt, L. (1978). *The reader, the text, and the poem: The transactional theory of the literary work*. Carbondale, Il: Southern Illinois University Press.

Vosniadou, S., & Ortony, A. (1983). The emergence of the literal-metaphorical-anamalous distinction in young children. *Child Development*, 54(1), 154-161.
doi: 10.2307/1129872

Authors:

Christopher Meidl, Ph.D.

4127 Murray Avenue

Pittsburgh, PA 15217

E-mail address: meidlc@duq.edu

Businessphone numbers: **(412)396-2620**

Institutional affiliation: **Duquesne University**

Co-Author: Jordyn Hintz, BA Early Childhood Education, St. Norbert College, De Pere, WI.
jordyn.hintz@snc.edu

Coteaching partnerships during student teaching: Cooperating teachers' professional realizations and growth

Dr. Elizabeth Testa, Dr. Lisa A. Borgerding, and Dr. Todd S. Hawley

* Correspondence:

Dr. Elizabeth Testa
Assistant Professor
School of Teaching,
Learning, and Curriculum
Studies
Kent State University
401 White Hall, Kent State
University
Kent, OH 44242
etesta@kent.edu
Full list of author
information is available at
the end of the article

Abstract:

In response to the emphasis within teacher education to adopt a coteaching model of student teaching in general education courses, this study explored how coteaching relationships impacted cooperating teachers over the course of a school year. Drawing on qualitative interview and focus group data, we present findings that specifically address how the coteaching model of student teaching impacted cooperating teachers' perceptions of their operationalization of coteaching and the benefits of this model. Using a grounded theory approach to data analysis, we developed two main categories of findings: lessons learned, and professional realizations. These categories of findings suggest that the coteaching model of student teaching has the potential to overcome challenges inherent in mentoring student teachers while providing enlightening experiences and growth for experienced teaching professionals.

Introduction

Long considered the capstone experience of initial teacher preparation, student teaching persists as the final learning context for most teacher education programs (TEPs.) However, in response to federal initiatives from the Department of Education and national accrediting bodies (NCATE, 2010; CAEP Commission on Standards and Performance Reporting, 2013; National Research Council, 2010), many TEPs have revamped key components of their programs, including student teaching, leading to changes that espouse coteaching models during the student teaching practicum. Accordingly, these models propose cooperating teachers collaborate with student teachers in less hierarchical ways (Roth & Tobin, 2002) where both share in the planning, instruction, and assessment of students (Friend & Cook, 2013; Bacharach, Heck & Dahlberg, 2010a).

Our teacher education program was among those impacted by these initiatives. At the state level, the deans of colleges of education at both public and private colleges and universities were encouraged to reform/revise their student teaching practica to espouse a coteaching model.

. At our institution, each program was given great latitude in determining how to develop the model, or to adopt the model at all. As teacher educators and practitioner researchers, we were interested in understanding how our programmatic emphasis on a coteaching model impacted those participating, in particular, studying how coteaching partnerships developed, or not, over the course of the school year and the perceptions the cooperating teachers had of the impact that coteaching with a student teacher had upon them. To address our questions, we developed two research questions to guide our study: 1. What are cooperating teachers' perceptions of their abilities to operationalize aspects of coteaching during the student teaching experience? and, 2. What impacts did coteaching with student teachers have upon the cooperating teachers?

Theoretical Framework

Learning to teach and learning while teaching, involve interconnections among the learner with discipline-specific content knowledge and pedagogical knowledge, the processes of enacting this knowledge, and the various contexts surrounding teaching events (Shulman, 1986; Feiman-Nemser, 2008). In particular, the student teaching practicum creates a complex learning context involving a network of mediating factors affecting learners as they negotiate the setting and make decisions about instruction. Furthermore, the cooperating teachers participating in this study interacted with new knowledge of coteaching practices that required them to appropriate new sets of pedagogical and conceptual tools related to coplanning, shared instruction, and coreflection. Therefore, this research is grounded in sociocultural theories of learning. From this stance, we believe learning to teach is a meaning-making endeavor mediated by several factors that include: the contexts of school and community, the relationship between the student teacher

and cooperating teacher, and each individual's beliefs about learning to teach. Relatedly, learning while teaching involves many of the same mediating factors.

Our work also draws upon activity theory. Activity theory assumes the primacy of action which is carried out in specific settings comprised of social structures developed over time in culturally grounded ways (Grossman, Smagorinsky & Valencia, 1999). The individual develops conceptual and pedagogical tools to complete their actions within these settings. According to Grossman et al. (1999), "conceptual tools are principles, frameworks, and ideas about teaching and learning... that teachers use as heuristics to guide decisions about teaching and learning" (p. 11). Commonly utilized conceptual tools include broad learning theories such as constructivism and more specific theoretical approaches such as the writing process in language arts or connections to nature of science in science education. Conversely, pedagogical tools refer to the more immediate utility of classroom strategies and resources that align to conceptual frameworks of teaching and learning (Grossman et al., 1999). For example, classroom routines such as bellwork, exit slips, or classroom resources such as SmartBoards and textbooks are common pedagogical tools. Another central concept, the idea of appropriation, concerns individuals adoption of ways of knowing and acting according to their participation in socially situated practices (Grossman et al., 1999). In this paper, we focus on the activities occurring within the context of the relationship between the PST and the cooperating teacher and the perceptions of how the relationship professionally impacted the cooperating teacher.

Literature Review

Previous literature has documented how cooperating teachers often feel generally unprepared and unsupported in their cooperating teaching role. Cooperating teachers

consistently lament that they were never trained for their roles with their student teacher (Clarke, Triggs, & Nielson, 2014; Young & MacPhail, 2015). Some of this lack of preparation is related to poor communication with the university. For example, cooperating teachers complain that they are not clear on the university's' expectations for cooperating teachers and do not feel adequately supported by the university (Applegate & Lasley, 1982; Koskela & Ganser, 1995). Cooperating teachers complain that they lack clear guidelines and consequently do not know how to evaluate their student teachers (Koskela & Ganser, 1995; Young & MacPhail, 2015).

Cooperating teachers are sometimes challenged by various aspects of their roles as cooperating teachers. First, cooperating teachers have a tendency to still feel very responsible for their own students (Clarke, et al., 2014) and struggle to relinquish control of their classrooms (Torrez & Krebs, 2012). Second, cooperating teachers struggle with providing constructive feedback without being overly critical (Clarke, et al, 2014; Koskela & Ganser, 1995; Torrez & Krebs, 2012; Young & MacPhail, 2015). Some of this tension arises because cooperating teachers are challenged as they negotiate the line between being a colleague/friend and a “critical” friend (Young & MacPhail, 2015). Finally, cooperating teachers struggle to find time to meet and reflect with their student teachers throughout the day (Torrez & Krebs, 2012; Young & MacPhail, 2015).

Research on the Coteaching model of student teaching

Within the field of special education, coteaching has been defined as two teaching professionals sharing responsibility for planning, instructing, assessing, and sharing in other professional duties (Friend & Cook, 2013). Coteaching as a model for preservice teacher practicums has been emerging over the last decade (Bacharach, Heck & Dahlberg, 2010a; Murphy & Scantlebury, 2010). In the US, Roth and Tobin (2002) conducted a coteaching study

of several preservice teachers, cooperating teachers and university faculty in secondary science education claiming that coteaching “provides an ideal context for learning by providing a ‘zone of proximal development’ in which the collective achieves more than the individual alone” (p. 250). Concurrently, Bacharach et al. (2010b) described the many positive impacts that coteaching has upon all learners involved, including the P-12 students, preservice teachers, and cooperating teachers.

In the UK, Murphy and Beggs (2010) conducted a five-year longitudinal study collecting data on coteaching arrangements among student teachers, cooperating teachers, university faculty and children in 120 primary science classrooms. They found highly positive impacts upon the student teachers and cooperating teachers, in particular, an increase in the “democratisation of teaching” because of the equalizing of relationships due to the coteaching partnerships (Murphy & Beggs, 2010, p. 33). Murphy, Carlisle, & Beggs (2010) further asserted that a decade of research on coteaching indicates expansive impacts on teaching and learning for all participants. They describe the many enriched resources available through the collaboration including those generated during coplanning, coteaching, coevaluation, shared subject or content knowledge, shared pedagogical knowledge, division of labor, and guiding principles of collaboration, such as, corespect, coresponsibility, and coordination.

Research Design

Context

This study was conducted using participants who have volunteered to serve as cooperating teachers in a secondary teacher education program housed in education at a large Midwestern university. The program prepares Language Arts, Mathematics, Science and Social Studies

teachers for licensure in 7th – 12th grades. The majors included a range of 60 to 80 semester hours of content coursework across a broad range of subjects, 12 hours of general education coursework (Education in a Democratic Society, Educational Psychology, Instructional Technology, and Introduction to Exceptionalities), a three-hour adolescent literacies course, a three-hour general secondary teaching course, six hours of content specific teaching coursework, and a 96-hour field placement with accompanying practicum seminar coursework. This was followed by student teaching and a content specific student-teaching seminar. Students complete their field placement and student teaching experience at the same school and work with the same cooperating teacher across both semesters.

Participants

This study included 13 cooperating teachers (11 female, 2 male) who agreed to participate in this investigation of the various ways cooperating teachers, student teachers, and university supervisors developed coteaching relationships during a yearlong internship that culminated in 12 weeks of student teaching. In this manuscript, we draw upon data from 11 participants because each participated in two individual interviews. These 11 cooperating teachers taught secondary science (two), math (one), and language arts (eight) across six high schools and one middle school.

Data Collection

The sources of data for this project included two individual interviews with each cooperating teacher and several focus group interviews. Each cooperating teacher participated in one of the focus group interviews. The first interview occurred in November of the fall practicum semester, just before or after the student teachers taught a two-week unit. This first interview was used to characterize the teaching context, the cooperating teachers' views of

student teaching and teacher education, and the development of the student teacher-cooperating teacher relationship and how, at that point, it was being situated within a coteaching framework. The second interview occurred in March, during the student teaching semester. At the end of the spring student teaching semester, the cooperating teachers were invited to participate in focus groups and individual interviews depending on their availability.

Data Analysis

Following each individual and focus group interview, all data were fully transcribed. The process of data analysis was guided by a grounded theory approach as described by Strauss and Corbin (1990). First, the authors independently open-coded eight Interview 2 transcripts, and this analysis was guided by the open question: in what ways are cooperating teachers impacted by their participation in this student teaching experience? The authors convened and compared open codes, developing a preliminary coding scheme that included four main impact codes: challenges, social benefits, lessons learned, and professional realizations. An additional code encapsulating the nature of the relationship between the cooperating teacher and student teacher was added because of its relevancy to the nature of impacts at this time. The authors then independently applied these preliminary codes to the eight original Interview 2 transcripts and the eight corresponding Interview 1 transcripts. Again the authors met to discuss these preliminary codes and develop and refine subcodes, and an additional code describing cooperating teachers' beliefs about the process of learning to teach was added at this point. This iterative process continued until all sets of transcripts were coded. We then met to discuss the codes and to explore themes emerging from the data. This process led to the developing of three major findings focusing on the lessons learned and professional realizations from the coteaching experience.

Findings

Lessons Learned

How to Teach about Teaching. Two participants (Andie and Lexi) described lessons they had learned about teaching about teaching. In her second interview, Lexi recounted a story about when her student teacher did not feel comfortable sharing her concerns about entering the teaching profession. Lexi (2) said, “it just made me aware that I need to work a little more on my communication skills” and that previously she “didn’t’ think [she] would have to invite someone into a conversation.” On a more positive front, Andie (2) said she had “learned a lot about being more organized and holding someone else accountable.” Later, Andie (Focus) explicitly reflected how she had learned to teach about teaching: “I always thought I really understood teaching but not enough to teach it and I’m like oh, I think I can teach teaching” (Andie, Focus).

New Lessons, Strategies, Technology. Seven participants described how they learned about specific lessons, technology, examples, and strategies from their student teachers. Four teachers described learning new technology from their student teachers: powerpoints (Kyle, 2), websites (Kyle, 2), Twitter (Carin, Focus), Google Drive (Heidi, 2), blogs (Heidi, 2; Ginny 2 & 3), wikis (Ginny, 2), and various apps (Ginny, 2). Teachers described how the student teachers’ fluency with this technology has given them the experience and impetus to use technology in the future even though, as Ginny (2) described, she “would have been leery to try [technology] on my own.” Two participants described adopting specific activities and lessons that their student teachers employed. Kyle (2) told his student teacher, “if you do anything on that computer, it’s gotta be saved!” Two participants also described new methods and strategies that their student teachers have introduced to them. For example, Kendra (Focus) described how her student

teacher shared “creative strategies that” she had never used or had not “tried in a long time.”

Finally, Colleen. (2) benefited from her student teacher’s “real world experience” in the field of mining.

Impact on Future Teaching. Beyond adopting specific new strategies, two cooperating teachers described how the coteaching experience impacted their future teaching in broader ways. First, Heidi (2) described how coteaching made her “better prepared for these kids for next year too.” In her focus group, Heidi described how the experience will guide her future coteaching arrangements, saying “I think I’m better geared and better equipped than to now work with that intervention teacher here” so that they could “try to mutually plan together.” Maria (2) felt that coteaching inspired her. She explained that, “it makes me want to be more excited about the lessons that I’m coming up with and to think innovatively about how it is that I want to take my students where they need to go.” She attributed this inspiration to “being around somebody that has these newer ideas and has been trained in ways that I haven’t been” (Maria, 2).

Professional Realizations

The final set of impacts coteaching had upon cooperating teachers pertained to professional realizations made by the participants. Several of these realizations were rooted in coreflection and personal reflection. Cooperating teachers reflected more about their teaching, reflected more out loud with their student teacher, and reflected more about teacher education. Other realizations were more personal, including, cooperating teachers learning to appreciate themselves better, feeling inspired and invigorated, and gaining a willingness to take more professional risks.

Reflecting More About How I Teach. By slowing down to reflect with their student teacher about their coteaching, five participants described how they were able to come “back to the basics” (Carin, 2) of their teaching. For Andie (2) it meant analyzing and re-analyzing “what we do and why.” Colleen (Focus) claims you “forget why you’re doing those things” but that the process of explaining these choices to her student teacher helped her to examine those reasons. She valued this process because she felt she would be more confident explaining the course to a new hire starting the coming fall. Ginny (2) mentioned how being more reflective caused her to revisit strategies from her past and how she relished “telling her [student teacher] wisdom from the past.”

Five participants appreciated being able to “observe your own classroom” (Colleen, Focus) as their student teachers taught. Kyle (2) appreciated “see[ing] what she misses, ‘cause it gave me things to think about when I’m up there with my back turned.” Colleen (Focus) found it enlightening to watch Shane teach and encounter classroom management problems that were “happening because I didn’t do this or I haven’t been doing that.” Similarly, Carin (2) deliberated her choices in responses to students during her conversations with her student teacher. She emphasized the importance of “having someone here and thinking about how I am interacting with these kids. Is it appropriate, is it the way we want to do it?” (Carin, 2). During the focus group, Carin, reiterated how valuable it was to “watch Kayla in action and see where I need to--things that I know I’ve let slip that I was seeing with her, reflected in her” (Carin, Focus). Candace described a related awareness of these up-close interactions emphasizing that when “somebody’s in the room watching and participating with me, I can’t be off my game” (Candace, 2). Kendra took her action a step further; as she analyzed her student teacher’s

performance, she questioned her practice asking, “how could I get everyone involved? How can I make today different than yesterday?” (Kendra, 3).

Reflecting More About Teaching Education. Among the five teachers who expressed an impact related to teaching education, Andie was the most ebullient. She explained how she questioned if she “really understood teaching enough to teach it,” and after she finishing coteaching with Shane she asserted, “I think I can teach teaching!” (3). Carin pondered the same question as she cotaught with Kayla wondering, “Could I teach this to somebody else, what I do on a daily basis?” (2). As a mentor teacher to new teachers in her district, Candace’s response highlighted her belief that the district “needs to incorporate the coteaching models” into their induction program (2). Maria shared her student teacher with Candace, who had been Maria’s cooperating teacher a decade before. Maria felt the experience coteaching with Rebecca gave her a unique insight by “getting to see both sides” of the teacher education partnership (1). Kendra described a revelation about how much she “care[s] about the profession” (2).

Willing to Take Professional Risks. Five participants attributed a willingness to take professional risks to their experience coteaching. For Carin (Focus), agreeing to be a cooperating teacher for the first time was a “big fear” she overcame. Sharon (3) declared that, because of the experience coteaching, she was “more open” and comfortable to share her classroom with somebody. Colleen (Focus) felt “really comfortable” taking on greater leadership in working with first-year teachers. Similarly, Candace (2) lobbied for “restructuring that mentoring program” to include coteaching. Candace (Focus) also shared how she approached her building leadership to allow her to have a duty period in which she would coteach with two 9th grade teachers whose classes would each have 6-8 students needing literacy support. When asked if the coteaching relationship with Rebecca influenced her ideas, she replied, “Oh absolutely. It gave

me the idea” (Focus). Heidi recounted how she felt “better equipped” after coteaching with Mallory, leading her to apply for an instructional coach position in her district.

Discussion

Aligning to Siry’s (2011) work, we observed that coteaching provided a structure where multiple perspectives of the shared teaching events appeared to foster critical reflexivity leading to professional learning. When the cooperating teachers shared aloud their thinking about teaching, they provided their student teachers glimpses of their professional knowledge situated in the moment. Gallo-Fox (2010) found learning alongside one another in these coteaching relationships became a practice. This learning “at the elbow of another,” (Roth & Tobin, 2002), allowed the cooperating teachers to reconsider, reframe, or remember aspects of their professional knowledge through their discussions before, during, and after teaching. Making their thinking visible clearly benefited their student teachers, but as several of our participants explained, it also helped the cooperating teacher examine their teaching practices in a formalized manner. Research demonstrates that teachers need professional learning opportunities that are sustained, substantive and draw upon the knowledge and wisdom of local sources, not outside experts (Feiman-Nemser, 2001; Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009); participating in coteaching appears to support these types of opportunities.

Coteaching engendered the development of social networks which enrich the pedagogical learning experiences of all involved (Scantlebury, Gallo-Fox & Wassel, 2008; Gallo-Fox, 2010, Roth & Tobin, 2002). As the cooperating teachers and student teachers developed their relationships, social benefits resulted. Some cooperating teachers expressed appreciating the good company and cultural experiences their student teachers provided. This led some to report

how much they valued that support. Perhaps most importantly, coteaching challenged the “norms of privacy and non-interference that characterize the culture of teaching” (Feiman-Nemser & Rosaeon, 1997, p. 17) by fostering an attitude of openness. According to Dewey (1933), a reflective disposition may be characterized as one of open-mindedness, wholeheartedness, and responsibility. For some of our cooperating teachers, the social conditions created through coteaching provided an environment for this type of disposition to develop.

Perhaps the most promising impact we found was the way some cooperating teachers reported a willingness to take professional risks based on their positive experiences coteaching. Gallo-Fox (2010) also found that cooperating teachers experienced risk-taking when coteaching with interns, particularly in terms of taking greater pedagogical risks by expanding their repertoire of instructional approaches. While our findings concur with hers, further research is needed to understand the factors influencing this impact. For example, do those willing to become cooperating teachers already possess a degree of openness about risk-taking in their practice?

As we grapple with what this means for teacher education, we recognize two important factors endemic to TEPs that challenge the preparation of cooperating teachers for their mentorship roles. The first is the lack of training cooperating teachers receive (Bacharach, Heck, & Dahlberg, 2010b); the second is related to the nature of this type of training. We acknowledge that the cooperating teachers participating in this study had little training on how to coteach other than a general overview of coteaching strategies that were presented at the student teaching Kick Off event the September of the fall practicum. Much of their learning was based upon their prior experiences coteaching with intervention specialists. Most often, the cooperating teachers employed a “trial and error” heuristic, whereby they gaged more successful ways to collaborate

based on the responses of their student teacher. As they considered these responses, some of our cooperating teachers focused on the learning outcomes of their student teacher as their means of determining the success of their mentoring. This is important because teacher educators and clinical field experience departments could assume more responsibility to initiate opportunities for cooperating teachers to learn coteaching techniques to better prepare them for this type of partnership.

Relatedly, the second challenge TEPs face in preparing cooperating teachers for this mentorship is associated to the complexity of the relationships. We observed sophisticated, nuanced professional learning by our participants, in part due to the deeply personal process of sharing one's teaching practice with another (Gallio-Fox, 2010). Because of the intimacy, we believe teacher educators and clinical field experience departments must differentiate their training to best suit the needs of the individual cooperating teachers. For example, in response to these needs, TEPs may provide opportunities for cooperating teachers who have robust experiences coteaching to mentor those with little.

Conclusion

At the beginning of this study, we hoped to understand how coteaching partnerships during student teaching develop and their impact upon the participants. As we analyzed the data and reflected together, the responses of the cooperating teachers impressed us, causing us to become intrigued by the idea that coteaching during student teaching may be a form of professional development. The findings of this study demonstrate that as a cooperating teacher coteaches with a student teacher, he or she is compelled to closely examine their own practice. The level of reflection these partnerships provided appear to have the greatest potential for developing

professional understandings. These intense coteaching relationships also presented challenges for the cooperating teachers, in part, because they embarked upon a transition into becoming a teacher educator. Through coplanning, coteaching, and coreflection, the cooperating teachers learned to be “in the moment” with their student teacher providing a more intensive experience as a teacher educator than that experienced by university faculty. TEPs would do well to further study the dynamics of this transition.

References

- Applegate, J.H., & Lasley, T.J. (1982). Cooperating teachers’ problems with preservice field experience students. *Journal of Teacher Education*, 33, 15-18.
- Bacharach, N., Heck, T., & Dahlberg, K. (2010a). Changing the face of student teaching through coteaching. *Action in Teacher Education*, 32(1), 3-14.
- Bacharach, N., Heck, T., & Dahlberg, K. (2010b). Researching the Use of Coteaching in the Student Teaching Experience. In C. Murphy and K. Scantlebury (eds.), *Coteaching in International Contexts: Research and Practice*, Cultural Studies of Science Education, pp. 35-52. Springer Science + Business Media. DOI 10.1007/978-90-481-3707-7_6.
- CAEP Commission on Standards and Performance Reporting. (2013). *Draft recommendations for the CAEP Board*. CAEP Council for the Accreditation of Educator Preparation.
- Clarke, A., Triggs, V., & Nielsen, W. (2014). Cooperating teacher participation in teacher education: A review of the literature. *Review of Educational Research*, 84, 163-202.
- Dewey, J. (1933) *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston: D.C. Heath.
- Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record*, 103(6), 1013-1055.
- Feiman-Nemser, S. (2008) “How do teachers learn to teach?” In M. Cochran-Smith, S.

- Feiman-Nemser, D.J. McIntyre & K.E. Demers (Eds.), *Handbook of research on teacher education: Enduring questions in changing contexts*, (697-705). New York: Routledge, Taylor & Francis Group and the Association of Teacher Educators.
- Feiman-Nemser, S. & Rosaen, C., Eds. (1997). *Guiding teacher learning: Insider studies of classroom work with prospective & practicing teachers*. American Association of Colleges of Teacher Education, Washington, DC.
- Friend, M.P. & Cook, L. (2013). *Interactions: Collaboration skills for school professionals*. Boston: Pearson.
- Gallo-Fox, J. (2010). Risk-taking as practice in coteaching professional learning community. In C. Murphy and K. Scantlebury (eds.), *Coteaching in International Contexts: Research and Practice*, Cultural Studies of Science Education, pp. 109-28. Springer Science + Business Media. DOI 10.1007/978-90-481-3707-7_6.
- Grossman, P., Smagorinsky, P., & Valencia, S. (1999). Appropriating conceptual and pedagogical tools for teaching English: A conceptual framework for studying professional development (CELA Report No. 12011). Albany, NY: National Research Center on English Learning & Achievement.
- Koskela, R., & Ganser, T. (1995). Exploring the role of cooperating teacher in relationship to personal career development. Paper presented at the Annual Meeting of the Association of Teacher Educators, Detroit, MI.
- Murphy, C. & Beggs, J. (2010). A five-year systematic study of coteaching science in 120 primary schools. In C. Murphy and K. Scantlebury (eds.), *Coteaching in International Contexts: Research and Practice*, Cultural Studies of Science Education, pp. 109-28. Springer Science + Business Media. DOI 10.1007/978-90-481-3707-7_6.
- Murphy, C., Carlisle, K., & Beggs, J. (2010). Can they go it alone? Addressing criticisms of coteaching. *Cultural Studies of Science Education*, 4, 461-475. Do 10.1007/s11422-008-9150-9
- Murphy, C. & Scantlebury, K. (2010). Introduction to Coteaching. In C. Murphy and K. Scantlebury (eds.), *Coteaching in International Contexts: Research and Practice*, Cultural Studies of Science Education, pp. 109-28. Springer Science + Business Media. DOI 10.1007/978-90-481-3707-7_6.
- National Council for Accreditation of Teacher Education. (2010). *Transforming teacher education through clinical practice: A national strategy to prepare effective teachers*. Report of blue ribbon panel on clinical preparation and partnerships for improved student learning. Washington, D.C.: NCATE.
- National Research Council, Committee on the Study of Teacher Preparation Programs in the United States (2010). *Preparing teachers: Building evidence for sound policy*. Washington, DC: The National Academies Press.

- Roth, W. & Tobin, K. (2002). *At the elbows of another: Learning to teach through coteaching*. New York: Peter Lang.
- Scantlebury, K. Gallo-Fox, J. & Wassell, B. (2008). Coteaching as a model for preservice secondary science teacher education. *Teaching and Teacher Education*, 24(2008), 967-981. doi: 10.1016/j.tate.2007.10.008
- Shulman, L. (1986). Those who understand: Knowledge and growth in teaching. *Educational Researcher*, 15(2), 4-14. doi:10.3102/0013189X015002004
- Siry, C. (2011). Emphasizing collaborative practices in learning to teach: coteaching and cogenerated dialogue in a field-based methods course. *Teaching Education* (22)1, 91-101.
- Strauss, A.L., & Corbin, J. (1990). *Basics of Qualitative Research. Grounded Theory Procedures and Techniques*. Newbury Park, CA: Sage.
- Torrez, C.A. F., & Krebs, M.M. (2012). Expert voices: What cooperating teachers and teacher candidates say about quality student teaching placements and experiences. *Action in Teacher Education*, 34, 485-499.
- Wei, R. C., Darling-Hammond, L., Andree, A., Richardson, N., Orphanos, S. (2009). Professional learning in the learning profession: A status report on teacher development in the United States and abroad. Dallas, TX. National Staff Development Council.
- Young, A., & MacPhail, A. (2015). 'Standing on the periphery': Cooperating teachers' perceptions and responses to the role of supervision. *European Physical Education Review*, 21, 222-237

Authors:

Dr. Elizabeth Testa
Assistant Professor
School of Teaching, Learning, and Curriculum Studies
Kent State University
401 White Hall, Kent State University
Kent, OH 44242
etesta@kent.edu

Dr. Lisa A. Borgerding
Associate Professor
School of Teaching, Learning and Curriculum Studies
Kent State University
404 White Hall
Kent, OH 44240
ldonnell@kent.edu

Dr. Todd S. Hawley
Associate Professor
School of Teaching, Learning and Curriculum Studies
Kent State University
404 White Hall
Kent, OH 44240
thawley1@kent.edu

Negotiating Between Efficiency and Flexibility: Learning from the Classroom Experiences of Early-Career Elementary Teachers

Aaron S. Zimmerman, Ph.D.

* Correspondence:
Aaron Zimmerman
4510 Ironton Ave., Apt.
6105
Lubbock, TX 79407
aaron.zimmerman@ttu.edu
Full list of author
information is available at
the end of the article

Abstract:

Contemporary frameworks of ambitious teaching encourage teachers to enact flexible, student-centered instructional practices, and, yet, teachers must also manage a multidimensional set of practical concerns while teaching in the classroom. Findings from 24 post-lesson interviews from 12 early-career elementary teachers are presented, and the data is analyzed in terms of whether or not these teachers attempted to revise their instruction while teaching. The findings highlight the manner in which the pressure to complete predetermined lesson activities and the prominent concern to manage time efficiently shape early-career teachers' enactment in the classroom. Implications for teacher education are discussed.

Contemporary frameworks of ambitious teaching (Forzani, 2014; Lampert et al., 2013; McDonald et al., 2014) encourage teachers to enact quasi-improvisatory practices that are responsive to student thinking (Harlow, 2010; Lampert & Graziani, 2009; Sawyer, 2004; Twiner, Littleton, Coffin, & Whitelock, 2014). Rather than prescribing a predetermined set of teacher-centered moves (cf. Brophy & Good, 1986), the practice of “[a]mbitious teaching requires that teachers teach *in response to what students do*” (Kazemi, Franke, & Lampert, 2009, p. 1). An ambitious teacher

uses skills to elicit and interpret student thinking, decides based on that interpretation what to do next, and then uses more skills to pose additional questions, provide explanations, model content, and then elicit more responses from students...[Thus,] every teaching situation will require new judgment about what to do and how to do it. (Forzani, 2014, p. 9)

There are a number of reasons, however, why early-career teachers often have difficulty enacting ambitious pedagogies that are responsive to student thinking.

. First of all, this approach to pedagogy is not something that comes naturally and, hence, requires a significant amount of professional training (Ball & Forzani, 2009; Lampert et al., 2013). Second, this approach to pedagogy is often in contrast to the teacher-centered, didactic approaches to curriculum and instruction that novice teachers experienced as students themselves (Britzman, 1986; Knowles & Holt-Reynolds, 1991; Lortie, 1975). Third, ambitious and responsive pedagogy is not always practiced and/or endorsed in the field; thus, novice teachers may begin their careers in schools that reinforce traditional approaches to curriculum and instruction, thereby potentially discouraging novice teachers from engaging in more complex and ambitious pedagogies (Feiman-Nemser & Buchmann, 1987; Smagorinsky, Cook, Moore, Jackson, & Fry, 2004; Valencia, Martin, Place, & Grossman, 2009). Fourth, developing the instantaneous professional judgment necessary for interactive classroom teaching may be one of the greatest challenges that novices face, particularly because novice teachers tend to struggle to synthesize the multiple goals and concerns that preoccupy them in the classroom (Kennedy, 2005; Leinhardt & Greeno, 1986; Wagner, 1987; Westerman, 1991). This article will focus on this fourth challenge. In particular, this article will explore the practical dilemma of teaching in a responsive, student-centered way while simultaneously attending to the management of time.

Negotiating Between Efficiency and Flexibility While Teaching

Teachers must be continually cognizant of time. While this is true for all teachers, time is an especially prominent concern for novice teachers (Aloe, Amo, & Shanahan, 2014; Melnick & Meister, 2008) for at least three reasons. First, without a robust cognitive schema to make sense of the complex environment of the classroom (Berliner, 2001; Leinhardt & Greeno, 1986), novice teachers, pulled in multiple directions simultaneously, may suffer cognitive overload in

the classroom (Feldon, 2007; Moos & Pitton, 2013). In order to mitigate this cognitive burden, novice teachers may prioritize the completion of predetermined lesson activities in a timely manner. Focusing one's efforts on bringing learning activities to completion can serve as a powerful goal that orients – and simplifies – a teacher's classroom thinking (Fischler, 1994; Parker & Gehrke, 1986; Romano, 2006), even though the prioritization of this goal can hamstring teachers' ability to modify their instruction in response to what students say and do during the lesson.

Second, preservice and early-career teachers may enter the profession with a particular cultural image of teaching: one in which teachers are always confident and in control of the classroom (Britzman, 2003; Helsing, 2007). In fact, some aspiring teachers may be attracted to the teaching profession, in part, because they want to be seen by their students as respected authority figures (Friedman, 2016). If novice teachers enter the profession with this authoritative image of teaching in mind, then these teachers may be especially vigilant in making sure that they project this image to their students and colleagues (Greenwalt, 2008; Rosaen, Lundeberg, Cooper, & Fritzen, 2010). As a result, novice teachers may seek to avoid any instructional improvisations that may disrupt the momentum of their lesson (Britzman, 2003; Romano, 2006). Rather than seeking out meaningful opportunities to diverge from predetermined lesson plans, novice teachers – in an attempt to remain certain of everything that happens in the classroom – may opt to ensure that all lesson activities are completed within the given lesson.

Third, certain educational policies may compel teachers to teach as efficiently (and as time consciously) as possible. Because teachers are held accountable for their students' learning through high-stakes accountability measures, teachers cannot leave what students learn to chance (Cohen, 2011; Palmer & Rangel, 2011; Uzuntiryaki, Boz, Kirbulut, & Bektas, 2010). Thus, even

if teachers intend to facilitate exploratory learning opportunities in the classroom and to adapt any given lesson in an improvisatory manner as the lesson unfolds, teachers may feel pressure to direct students towards predetermined learning outcomes (Cuban, 2007; Herbst, 2002; Windschitl, 2002). Mandates to achieve specific learning objectives may compel teachers to “cover” these learning objectives in a cursory, even superficial manner, rather than treating these learning objectives as opportunities for authentic student inquiry (Li, Klahr, & Siler, 2006; Schwartz, Sadler, Sonnert, & Tai, 2009). Thus, these policies may spur teachers to prioritize time management at the expense of ambitious and flexible curriculum and instruction.

The purpose of the study presented in this article was to investigate the manner in which time management was perceived to be a practical concern that shaped the teaching of Midwestern early-career elementary teachers.

Methods

Using a volunteer sample, 12 early-career elementary teachers (teaching between grades K-5) were recruited from two Midwestern schools districts. During the time of the study, each teacher possessed between 0 to 4 years of previous teaching experience. Within one academic year, these 12 teachers were observed twice (once during the fall semester and once during the spring semester), each time teaching a mathematics lesson. After the observation, the researcher conducted a post-lesson structured interview with the teacher. This article will focus on one specific question from the structured interview: *“During the lesson, did you not do something that you had planned to do?”* It was hypothesized that this question would highlight the nature in which these teachers made spontaneous decisions while teaching, including how the management of time influenced their classroom decision-making.

Findings

In this section, I will highlight responses from the 24 post-lesson interviews.

During one interview, the teacher reported not achieving something during the lesson because of forgetfulness:

- “In the middle of their independent work, I figured that I should give them the answers ...[but] I forgot to.” (Teacher #8, Interview #2)

Within 2 of the 24 interviews, two different teachers indicated that they had decided not to engage in a particular activity because of student behavior or student understanding:

- “I didn’t do the problem set...because I didn’t feel that they were ready.” (Teacher #8, Interview #1)
- “[I didn’t get to all of] my assessments...[because the students] were too squirrely.” (Teacher #11, Interview #2)

These teachers did not indicate that they felt constrained by time but, rather, that they chose to modify their instruction based on what they were observing in the classroom.

These three responses, however, were exceptions within these interviews. During the majority of these interviews (specifically, 15 out of the 24 post-lesson interviews), teachers responded with an answer of “No,” i.e., teachers reported having been able accomplish everything that they had planned to accomplish during the given lesson.

In contrast to these responses, across the 24 post-lesson interviews, there were 6 teacher responses (from 6 different teachers) that indicted a particular way in which time interfered with their enactment of the prepared lesson plan:

- “I would have given more examples...but it was just a matter of [running out of time].” (Teacher #1, Interview #2)

- “I was planning on doing more of the problems in their books...but we ran out of time.” (Teacher #2, Interview #1)
- “I didn’t [do the activity] with the cubes...I didn’t have time...In terms of the time crunch, I chose not to [do the activity].” (Teacher #4, Interview #2)
- “I wanted to [compare the] equivalent fractions...but we didn’t get to that...We just ran out of time.” (Teacher #5, Interview #1)
- “I [had] wanted to get to my highest enrichment group...but...[I didn’t have the] time.” (Teacher #6, Interview #1)
- “My goal was to have that lesson done quick...That didn’t work out [because we ran out of time, so] I’m hoping to do that [tomorrow].” (Teacher #11, Interview #1)

From these responses, it is apparent that for some early-career elementary teachers, as they teach mathematics lessons, running out of time is, indeed, a practical concern that shapes their classroom decision-making. These teachers reported either not being able to engage in additional learning activities, not being able to check in with all of their students, or not being able to present additional mathematical examples.

Implications for Teacher Education

The responses presented in this article provide insight into the classroom thinking of early-career teachers. Specifically, I argue that both the teachers who provided the response of “No” (i.e., “I was able to achieve everything I wanted to achieve in the lesson”) as well as the teachers who cited “running out of time” as the reason for why they were not able to accomplish all of their lesson objectives share a particular paradigm for teaching. Specifically, both sets of teachers seem to believe that the teacher’s role in the classroom is to carry out all learning activities, within a given lesson, to completion. This is consistent with findings of past research

(Britzman, 2003; Fischler, 1994; Kennedy, 2005; Parker & Gehrke, 1986; Romano, 2006).

During these lessons (as indicated in 21 out of the 24 post-lesson interviews), these teachers either did not modify their prepared lesson as they taught or they had chosen to forgo a given component of the lesson because they felt that they were constrained by time. In both cases, time and completion were premier practical concerns that shaped teachers' decision-making during the lesson.

These findings, although limited in generalizability, compel teacher educators to carefully consider the deliberate ways in which they prepare teachers for uncertainty, flexibility, responsiveness, and improvisation – all essential characteristics of ambitious teaching (Floden & Clark, 1988; Helsing, 2007; Lampert & Graziani, 2009; Sawyer, 2004). As Forzani (2014) writes, ambitious teachers must decide, based on the continuous assessment of classroom stimuli, “what to do next...[and] every [subsequent] teaching situation will require new judgment about what to do and how to do it” (p. 9). If, when asked the question, “*During the lesson, did you not do something that you had planned to do?*” an early-career teacher responds, “No,” then it is reasonable to conclude that it is unlikely that this teacher continually assessed the classroom and revised his or her instruction accordingly. This highlights a dimension of teacher education that requires further development: i.e., how to develop early-career teachers' improvisatory skills as well as their disposition to revise their instruction while teaching (Sawyer, 2004).

Likewise, if teachers report that they did not accomplish something they had planned to accomplish explicitly because of time (as was noted in 6 out of the 24 post-lesson interviews), this highlights the need for teacher education to explicitly address the practical concern of managing time while teaching. Curiously, while many frameworks of practice-based teacher education seek to approximate the multidimensionality of teaching (Grossman et al., 2009), the

practical concern managing time during a lesson tends not to be a core practice of teaching emphasized within such paradigms of teacher education (cf. Lampert et al., 2013). Such paradigms, instead, tend to focus on the complex core practices necessary for ambitious teaching (e.g., anticipating, eliciting, and responding to student thinking). While such core practices are, indeed, requisite, the responses of the early-career teachers presented in this article suggest that it behooves teacher educators to assist pre-service teachers in their attempts to imagine how they might teach ambitious lessons while still satisfying all of the practical and situational constraints that are placed upon them in the classroom (Cohen, 2011; Herbst, 2002; Kennedy, 2006).

Conclusion

Ambitious teaching requires being flexible, but being flexible requires negotiating the practical constraint of time. The findings of the current study suggest that the completion of predetermined lesson plans and the efficient management of time while teaching are, indeed, primary concerns for early-career elementary teachers. If teacher educators aspire to cultivate ambitious, improvisatory, and student-centered instructional practices, then teacher educators must prepare novice teachers for the practical trade-offs that they will inevitably face in the classroom. In other words, teacher educators must scaffold novice teachers towards the ability to enact ambitious instruction in real time.

Research reported in this paper was supported by the National Science Foundation and the William T. Grant Foundation under award numbers (NSF REAL 1420532, WT Grant 182764)

References

- Applegate, J.H., & Lasley, T.J. (1982). Cooperating teachers' problems with preservice field experience students. *Journal of Teacher Education*, 33, 15-18.
- Bacharach, N., Heck, T., & Dahlberg, K. (2010a). Changing the face of student teaching through coteaching. *Action in Teacher Education*, 32(1), 3-14.
- Bacharach, N., Heck, T. & Dahlberg, K. (2010b). Researching the Use of Coteaching in the Student Teaching Experience. In C. Murphy and K. Scantlebury (eds.), *Coteaching in International Contexts: Research and Practice*, Cultural Studies of Science Education, pp. 35-52. Springer Science + Business Media. DOI 10.1007/978-90-481-3707-7_6.
- CAEP Commission on Standards and Performance Reporting. (2013). *Draft recommendations for the CAEP Board*. CAEP Council for the Accreditation of Educator Preparation.
- Clarke, A., Triggs, V., & Nielsen, W. (2014). Cooperating teacher participation in teacher education: A review of the literature. *Review of Educational Research*, 84, 163-202.
- Dewey, J. (1933) *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston: D.C. Heath.
- Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record*, 103(6), 1013-1055.
- Feiman-Nemser, S. (2008) "How do teachers learn to teach?" In M. Cochran-Smith, S. Feiman-Nemser, D.J. McIntyre & K.E. Demers (Eds.), *Handbook of research on teacher education: Enduring questions in changing contexts*, (697-705). New York: Routledge, Taylor & Francis Group and the Association of Teacher Educators.
- Feiman-Nemser, S. & Rosaen, C., Eds. (1997). *Guiding teacher learning: Insider studies of classroom work with prospective & practicing teachers*. American Association of Colleges of Teacher Education, Washington, DC.
- Friend, M.P. & Cook, L. (2013). *Interactions: Collaboration skills for school professionals*. Boston: Pearson.
- Gallo-Fox, J. (2010). Risk-taking as practice in coteaching professional learning community. In C. Murphy and K. Scantlebury (eds.), *Coteaching in International Contexts: Research and Practice*, Cultural Studies of Science Education, pp. 109-28. Springer Science + Business Media. DOI 10.1007/978-90-481-3707-7_6.

- Grossman, P., Smagorinsky, P., & Valencia, S. (1999). Appropriating conceptual and pedagogical tools for teaching English: A conceptual framework for studying professional development (CELA Report No. 12011). Albany, NY: National Research Center on English Learning & Achievement.
- Koskela, R., & Ganser, T. (1995). Exploring the role of cooperating teacher in relationship to personal career development. Paper presented at the Annual Meeting of the Association of Teacher Educators, Detroit, MI.
- Murphy, C. & Beggs, J. (2010). A five-year systematic study of coteaching science in 120 primary schools. In C. Murphy and K. Scantlebury (eds.), *Coteaching in International Contexts: Research and Practice*, Cultural Studies of Science Education, pp. 109-28. Springer Science + Business Media. DOI 10.1007/978-90-481-3707-7_6.
- Murphy, C., Carlisle, K., & Beggs, J. (2010). Can they go it alone? Addressing criticisms of coteaching. *Cultural Studies of Science Education*, 4, 461-475. Do 10.1007/s11422-008-9150-9
- Murphy, C. & Scantlebury, K. (2010). Introduction to Coteaching. In C. Murphy and K. Scantlebury (eds.), *Coteaching in International Contexts: Research and Practice*, Cultural Studies of Science Education, pp. 109-28. Springer Science + Business Media. DOI 10.1007/978-90-481-3707-7_6.
- National Council for Accreditation of Teacher Education. (2010). *Transforming teacher education through clinical practice: A national strategy to prepare effective teachers*. Report of blue ribbon panel on clinical preparation and partnerships for improved student learning. Washington, D.C.: NCATE.
- National Research Council, Committee on the Study of Teacher Preparation Programs in the United States (2010). *Preparing teachers: Building evidence for sound policy*. Washington, DC: The National Academies Press.
- Roth, W. & Tobin, K. (2002). *At the elbows of another: Learning to teach through coteaching*. New York: Peter Lang.
- Scantlebury, K. Gallo-Fox, J. & Wassell, B. (2008). Coteaching as a model for preservice secondary science teacher education. *Teaching and Teacher Education*, 24(2008), 967-981. doi: 10.1016/j.tate.2007.10.008
- Shulman, L. (1986). Those who understand: Knowledge and growth in teaching. *Educational Researcher*, 15(2), 4-14. doi:10.3102/0013189X015002004
- Siry, C. (2011). Emphasizing collaborative practices in learning to teach: coteaching and cogenerative dialogue in a field-based methods course. *Teaching Education* (22)1, 91-101.
- Strauss, A.L., & Corbin, J. (1990). *Basics of Qualitative Research. Grounded Theory Procedures and Techniques*. Newbury Park, CA: Sage.

Torrez, C.A. F., & Krebs, M.M. (2012). Expert voices: What cooperating teachers and teacher candidates say about quality student teaching placements and experiences. *Action in Teacher Education*, 34, 485-499.

Wei, R. C., Darling-Hammond, L., Andree, A., Richardson, N., Orphanos, S. (2009). Professional learning in the learning profession: A status report on teacher development in the United States and abroad. Dallas, TX. National Staff Development Council.

Young, A., & MacPhail, A. (2015). 'Standing on the periphery': Cooperating teachers' perceptions and responses to the role of supervision. *European Physical Education Review*, 21, 222-23.

Author:

Aaron S. Zimmerman
Texas Tech University
aaron.zimmerman@ttu.edu
4510 Ironton Ave., Apt. 6105
Lubbock, TX 79407

Aaron Zimmerman is an Assistant Professor of Curriculum and Instruction in the College of Education at Texas Tech University. He is interested in the interactive classroom decision-making of early-career teachers as well as in how teacher education can help prepare early-career teachers' for the practical realities of teaching. He earned his Ph.D. in Curriculum, Instruction, and Teacher Education from Michigan State University.

Inquiry: How it is Presented During Professional Development at an Informal Science Institution?

Gary M. Holliday, Ph.D.

* Correspondence:

Gary M. Holliday, PhD
The University of Akron
Department of Curricular
and Instructional Studies
Zook Hall, Room 314
Akron, OH 44325-4205
Office (330) 972-7437
Full list of author
information is available at
the end of the article

Abstract:

This study looked at a life science course that was offered at and taught by education staff of a large Informal Science Institution (ISI) located in the Midwest USA. Overall, participating teachers indicated a perceived efficacy in learning about and ability to teach inquiry to their students but there were unclear understandings about inquiry among both ISI staff and participants. The findings described here can assist developers of informal science professional development for elementary and middle school teachers that desire to incorporate inquiry, pedagogy, and science content into their teacher learning experiences.

Background

In general, the term “inquiry” can be used in three ways: as scientific inquiry, inquiry learning, and inquiry teaching (Anderson, 2007; National Research Council (NRC), 1996). In particular, inquiry learning and teaching are considered areas of concern for both formal classrooms and informal science settings. Inquiry learning has been described as the active process of learning (NRC, 1996). During this process, individuals construct meaning for themselves and modify prior conceptions. Further, inquiry learning is dependent upon the context, is socially constructed, and does have some relationship to scientific inquiry (Anderson, 2007). Exhibit designers in Informal Science Institutions (ISIs) often try to create experiences for visitors that tap into a similar process and will often be referred to as constructivist learning. However it will be important for the discussion, especially in the context of ISIs and their exhibits and exhibitions, to remember that inquiry learning also consists of two distinct components: visitors’ ability to do inquiry and visitors’ understanding about inquiry (NRC, 1996).

. Finally, using inquiry as a teaching method in science education is not fully addressed in the broad definition shared above and is a little more difficult to define in a succinct manner.

Classroom teachers may use inquiry (among many other teaching strategies) in order to “facilitate learning about scientific inquiry, developing the abilities of inquiry and understanding scientific concepts and principles” (Bybee, 2000, p. 37).

The quality of ISI professional development has been recognized by the National Science Teachers Association (NSTA, 1998), which has noted in their position statement that ISIs ‘offer teachers a powerful means to enhance both professional and personal development in science content knowledge and accessibility to unique resources’ (p. 17). That said, the research does not seem to support this claim. More recently, the *Next Generation Science Standards* (NRC, 2013) note the importance of learning science at Informal Science Institutions (ISIs) and inquiry skills are identified as scientific practices. However, for the sake of being consistent with the Ohio’s New Learning Standards for Science (Ohio Department of Education, 2011), the term ‘inquiry’ (instead of ‘practices’) will be used throughout this paper.

It has also been recommended that teachers go to ISI professional development for effective implementation of the reforms and learning of science content, along with pedagogical strategies unique to ISIs (Bell, Lewenstein, Shouse, & Feder, 2009; Duschl, Schweingruber, & Shouse, 2007; Michaels, Shouse, & Schweingruber, 2007; NRC, 2011, 2013). In order to assist classroom teachers with planning field trips to these unique learning environments, many ISIs offer inquiry-based professional development and materials for teachers in order to prepare them and their students (Astor-Jack, Balcerzak, & McCallie, 2006; Astor-Jack, McCallie, & Balcerzak, 2007; Neathery, 1998). Ramey-Gassert, Walberg, and Walberg (1994) also provide

support for ISI professional development stating that it assists with improving teaching skills during field trips and helps teachers develop an understanding of science while they learn about the role and purpose of ISI exhibits as well as the content presented within. Further, it has been asserted that ISIs provide many opportunities for inquiry learning (Russell, 1996) and the social interaction associated with it. However, it is unclear if there is a unified understanding of inquiry among ISI staff. Here, the focus will be on the incorporation of inquiry during ISI PD and the research question is: How is inquiry addressed during ISI professional development for elementary and middle school teachers?

Methodology

This study looked at two subject specific courses that were offered at and taught by staff at a large science center in the Mid-West, USA. An Environmental Science (ES) course was designed using ISI exhibits to address ecology and environmental science content. The other course addressed Life Science (LS) content focused on a specific exhibition that addressed life science content discussed during the course. The course was primarily taught by seven educators with a range two to five years teaching experience at an ISI. Some were also classroom teachers prior to teaching at the ISI: two were elementary school teachers, others had content backgrounds in social studies, environmental science, and reading, and there was a librarian as well. Occasionally, an educator with a Ph.D. in Biochemistry would lecture during the courses. Both courses were offered during the academic year and during the summer. Graduate credit was also available to interested participants.

Each full day meeting (for both the academic year and summer courses) focused on one or more of the above content areas and explored how that topic could be brought back into the classroom. While the ISI's exhibitions drove what content was addressed during the PD, teachers'

curriculum needs were also considered when developing PD objectives. Aside from this course being broad based and interdisciplinary, it explored how to further the incorporation of inquiry-based teaching methods into the classroom as well as the multiple ways that an informal science institution could be used to further the curriculum objectives established. In addition to lectures that took place in the ISI classroom for about 25% of the time, participants were involved with a variety of activities. This included free exhibition exploration, using worksheets or guiding questions in the exhibitions, guided tours with facilitators, exhibit designers, and ISI educators, exhibit hall demonstrations, and there were many lesson activities (about 26) that took place both in the classroom and exhibit areas. Most of the time spent during the PD involved teachers being engaged in the content related activities.

Participants

Each subject specific course was offered to two groups of teachers throughout the academic school year and one group during the summer. Both the academic year and the summer course participants provided a sample of convenience for this study. Course participants were 4-8th grade classroom teachers who spent 80-100% of their time working directly with students, with up to 30 years of teaching experience ($\bar{x} = 7.5$ years). Each course had approximately 30 teachers in each. Six courses were included in the study, with a total of 187 participating teachers. In compliance with the university's Institutional Review Board (IRB) protocol, all participants were asked to complete a consent form during the first meeting of each course.

Data Collection and Analysis

Portfolios were used as evidence of participants' understanding of inquiry addressed in the courses. Teachers had to include the following components: lesson plans, student work samples, and reflections upon teaching the lessons and coursework. First, copies of lesson plans relating to course content were required components to be included in the portfolios. If the participant was enrolled for graduate credit, they had to include 5-7 lessons and if they were not enrolled for graduate credit, 2-3 lessons were included. New lessons could be created or lessons presented during the ISI course could be used as well. For each lesson, notes were to be included about changes made before or during the lesson implementation along with a written reflection after the doing the lesson with their students, indicating what worked well and how the lesson might be improved. Second, student work including photographs of students engaged in the lesson, completed student worksheets or assessments, and student science notebook entries were required. However, while this was feasible for those teachers participating in the course that took place during the school year, this element was not likely for teachers involved in the summer sessions unless they happened to be teaching at the time. Therefore, summer course participants seeking graduate credit were not asked to submit student work.

In the reflection section of the portfolios, participants' were asked to provide overall thoughts and impressions about the course, addressing questions such as the following: "Did your participation in the program impact your teaching and your use of ISI resources? In what ways?" and, in particular, "Where does the lesson fall on the Hands-on/Inquiry continuum?" (see Figure 1). The continuum consists of two axis. The x-axis describes the level of inquiry included in the lesson, ranging from 'No Inquiry' to 'Full Inquiry'. The y-axis describes how hands-on the lesson is, ranging from 'Hands-off' to 'Hands-on'.

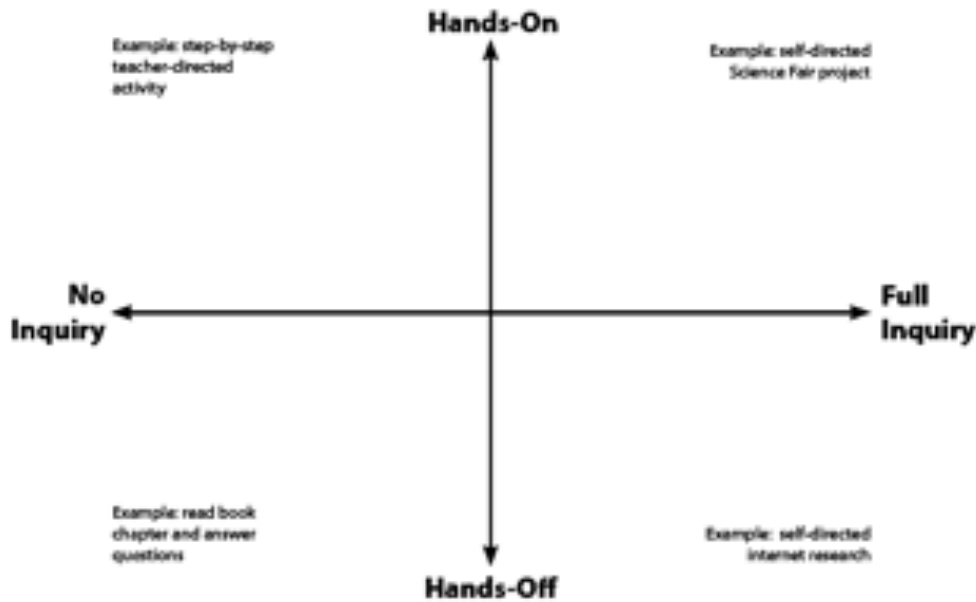


Figure 1. Hands-on/Inquiry Continuum

The staff also provided prompts to aid teachers in their reflection, such as “How are you going to use these activities in your classroom?” and “Why is it important to add inquiry to your activities?”. Using the continuum, teachers mapped out ‘hands-on’ activities (which were engaging students in activities) as opposed to ‘hands-off’ as well as ‘full inquiry’ lessons (which were seen to be student-centered) to ‘no inquiry’.

Only those participants electing to receive graduate credit during the academic and summer courses were included in this study. This was done to ensure that all were fulfilling the same requirements with a similar level of intent. The researcher independently scored them using rubrics designed by ISI staff and compared them to staff scores. Eight of the portfolios came from the *ES* course and seven portfolios were from the *LS* course. The teacher portfolios ($n = 15$) provided a range of teaching experience, grade level taught, and type of school, which was desired to inform the study. The researcher initially used Gee and Green’s (1998)

ethnographically grounded approach to as a framework to develop categories and themes found in the essays. This iterative process was used to fine-tune the themes.

In addition to portfolios, all teachers were asked to complete an evaluation at the end of each day's session. This included several questions that required participants to reflect upon the content presented throughout the course of the day. For instance, participants were able to indicate their satisfaction with the content presented in the PD on a scale of 1-10 (frequencies were produced for these items) and explain why. To provide further triangulation and support, the reflection questions from the daily evaluations and essays from the portfolios and graduate credit assignments were analysed in order to gain a deeper understanding of teachers' understanding of inquiry. Further, the researcher made non-participatory observations and took field notes with audio recordings during the entire course.

Results

During the PD, the researcher observed that the teachers were introduced to the 'inquiry wheel' (see Figure 2) and it was revisited throughout the course. Essentially, this tool was developed and used by staff as a tool to assist teachers and students with developing independent and dependent variables for experiments. A circle was attached with a brad to a larger rectangular piece of plastic and dependent variables were written outside the circle. Independent variables can be added by turning the circular piece in the middle. This was the only explicit connection made to inquiry during the course even though there were objectives designed to do so.

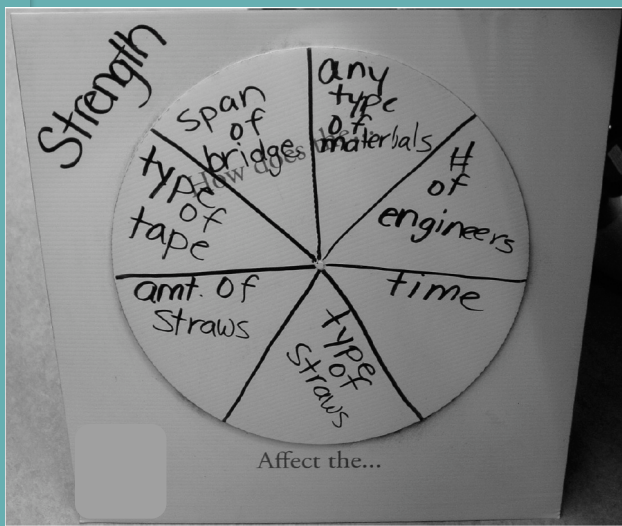


Figure 2. Inquiry Wheel

Later during the workshop, an experienced, retired, teacher came to the group to talk about inquiry teaching and learning. During this time, he spoke about how to engage students in questioning. The focus was on an egg, since the participants were learning about cells that day. A lengthy discussion occurred and the teachers seemed engaged and actively participated in the discussion. However, again, little explicit connections were made to inquiry afterwards.

Five themes emerged from the analysis of the reflection essays in the portfolios and graduate assignments: content, comfort and confidence, collaboration, resources, and inquiry. For this discussion, examples from the inquiry theme will be shared. However, it is important to remember that, like the evaluation responses, these are self-reported results and teachers may also be responding in a manner to please PD education staff. Again, during the course PD educators never explicitly addressed inquiry as an instructional strategy, therefore teachers had inconsistent ideas when reflecting upon it. Also, it should be noted that only the ISI lesson plans were used and included in the portfolios.

For instance, when writing about where a particular lesson fell on the Hands-on / Inquiry Continuum (see Figure 1) as part of the portfolio requirements, teachers repeatedly indicated whether a lesson was inquiry based by stating “the students did (or did not) follow the steps of

the scientific method”, which is a limited way to think about scientific processes. As shown in previous studies, it was evident that there was a conflation of the characteristics of ‘hands-on’ and ‘inquiry’ on the part of ISI PD providers and educational staff. In these studies, while NSES describes inquiry in three ways: (1) a teaching strategy, (2) understandings, and (3) abilities (NRC, 1996), ISI staff often meant a ‘hands-on’ (as in a manipulation of objects) engagement of PD participants and not the ability to think about scientific processes beyond the ‘scientific method’ (Astor-Jack, Balcerzak, & McCallie, 2006; Astor-Jack, McCallie, & Balcerzak, 2007) and the Hands-on / Inquiry Continuum seemed to contribute to this.

Even so, the majority of teachers in this study self reported a greater understanding of inquiry but provided further evidence of the conflation: “I have a better understanding of inquiry-based learning and a toolbox full of fun hands on activities to enhance the learning of my students.” This confidence was confirmed on the final evaluation question relating to the ‘inquiry wheel’: teachers were asked “On a scale of 1 – 10, how effective were the workshops in preparing you to do the following: ...use the inquiry wheel in your classroom...” (1 = completely not effective, 10 = completely effective). Teachers’ indicated that PD educators were effective in both courses (91% of teachers gave a rating of 9 or 10 for ES and 88% did the same in LS).

Overall, teacher responses on the daily and final evaluations for both courses were extremely positive. Since the same questions were asked on a daily basis, all of the responses were combined in the frequency graphs (four daily and one final evaluation for each participating teacher) shown below. Starting with Question 1: “On a scale of 1 – 10, how satisfied were you with today’s/this week’s workshops?” (1 = completely unsatisfied, 10 = completely satisfied). While none of the teachers in the ES course circled below an eight on the scale, 10 teachers did give a rating of six or seven on the LS evaluations. However, 91 of the 109 responses indicated

complete satisfaction (giving a rating of 10) with the ES course, 225 of 319 responses indicated complete satisfaction with the LS course. The open-ended questions connected to the above ratings included very positive comments as well, with teachers stating that the materials, activities, educators and exhibits were “great”, “awesome”, “excellent”, “fun”, “useful”, and “engaging”.

Discussion

In the reviewed literature, ISI exhibit developers and staff alike have been found to be more interested in visitors coming away with positive experiences and attitudes about science while visiting the science center or museum rather than having them learn the science content or understand scientific processes (Cox-Peterson, Marsh, Kisiel, & Melber, 2003; Davidsson & Jakobsson, 2008; Rennie & Williams, 2006, Tal & Morag, 2007). Given the findings of the research presented here, professional development opportunities for teachers are not so different. In the reflection essays, it became apparent that teachers had inconsistent understandings about inquiry. When considering inquiry as a content area, and since inquiry was determined by staff and PD developers to be an important component of the PD experience, this raises questions about how inquiry was addressed during the courses and PD staffs’ understanding of inquiry. Staff did attempt to make all of the content more palatable to teachers and this may have led to a more implicit instructional approach.

In previous studies, a majority of participants were also elementary or middle school teachers lacking science content knowledge and, since many were uncomfortable with teaching science, the intent (on the part of staff) was to bolster their confidence to teach rather than learning science content (Ferry, 1993, 1995; Kelly, 2000). This may explain why PD staff in this study

attempted to cover so many activities and instructional objectives in the time available. It was evident they wanted to provide as many hands-on activities and associated materials that could be easily brought back to teachers' classrooms.

All referred to inquiry as a teaching strategy, especially when modeling inquiry during the PD with the hope that the teacher will bring these techniques back to the classroom. Often, inquiry was conflated with 'hands-on' activities and modeling such teaching strategies is a primary method of instruction during ISI PD. When modeling teaching strategies, it is hoped that participating teachers will teach their students in the same manner although explicit connections are often not made (Astor-Jack, et al., 2006; Astor-Jack, et al., 2007). While inquiry was seen as engaging for students and teachers it seemed that when using this word it is really 'hands-on'. A more consistent language and explicit connections are required, especially when trying to communicate to K-12 teachers and districts about the PD programs offered at their ISI. This would also be necessary when trying to link to the inquiry-based regional and national curriculum. The findings described here can assist developers of informal science professional development for elementary and middle school teachers that desire to incorporate inquiry, pedagogy, and science content into their teacher learning experiences.

References

- Anderson, R.D. (2007). Inquiry as an organizing theme for science curricula. In S.K. Abell & N.G. Lederman (Eds.), *Handbook of research on science education* (pp. 807-830). Mahwah, NJ: Lawrence Erlbaum.
- Astor-Jack, T., Balcerzak, P., & McCallie, E. (2006). Professional development and the historical tradition of informal science institutions: Views of four providers. *Canadian Journal of Science, Mathematics and Technology Education*, 6 (1), 67-81.
- Astor-Jack, T., McCallie, E., & Balcerzak, P. (2007). Academic and informal science education practitioner views about professional development in science education. *Science Education*, 91 (4), 604-628.
- Bell, P., Lewenstein, B., Shouse, A. W., & Feder, M. A. (Eds.). (2009). *Learning science in informal environments: People, places, and pursuits*. Washington, DC: National Academies Press.
- Bybee, R.W. (2000). Teaching science as inquiry. In J. Minstrell & E.H. van Zee (Eds.), *Inquiring into inquiry learning and teaching in science* (pp. 20-46). Washington, DC: American Association for the Advancement of Science.
- Bybee, R.W. (2001). Achieving scientific literacy: Strategies for insuring that free-choice science complements national formal science education efforts. In J.H. Falk (Ed.), *Free-choice science education: How we learn science outside of school* (pp. 44-63). New York, NY: Teachers College Press.
- Cox-Peterson, A.M., Marsh, D.D., Kisiel, J., & Melber, L.M. (2003). Investigation of guided school tours, student learning, and science reform recommendations at a museum of natural history. *Journal of Research in Science Teaching*, 40 (2), 200-218.
- Davidsson, E., & Jakobsson, A. (2008). Staff members' ideas about visitors' learning at science and technology centers. *International Journal of Science Education*, 29 (1), 1-18.
- Duschl, R. A., Schweingruber, H. A., & Shouse, A. W. (Eds.). (2007). *Taking science to school: Learning and teaching science in grades K-8*. Washington, DC: National Academies Press.
- Ferry, B. (1993). Science centers and outdoor education centers provide valuable experience for pre-service teachers. *Journal of Science Teacher Education*, 4 (3), 85-88.
- Ferry, B. (1995). Science centers in Australia provide valuable training for preservice teachers. *Journal of Science Education and Technology*, 4 (3), 255-260.

- Kelly, J. (2000). Rethinking the elementary science methods course: A case for content, pedagogy, and informal science education. *International Journal of Science Education*, 22 (7), 755-777.
- Michaels, S., Shouse, A. W., & Schweingruber, H. A. (2007). Ready, set, science!: Putting research to work in K-8 science classrooms. Washington, DC: National Academies Press.
- National Research Council. (1996). *National science education standards*. Washington, DC: National Academy Press.
- National Research Council. (2011). *A framework for k-12 science education: Practices, crosscutting concepts, and core ideas*. Board on Science Education, Center for Education. Division of Behavioral and Social Sciences and Education. Washington, DC: National Academies Press.
- National Research Council. (2013). *Next generation science standards*. Board on Science Education, Center for Education. Division of Behavioral and Social Sciences and Education. Washington, DC: National Academies Press.
- National Science Teachers Association. (1998). An NSTA position statement: Informal science education. *Journal of College Science Teaching*, 28, 17-18.
- Neathery, M. F. (1998). Informal learning in experiential settings. *Journal of Elementary Science Education*, 10 (2), 36-49.
- Ohio Department of Education. (2011). *Ohio's new learning standards: Science standards*. Columbus, OH: Ohio Department of Education.
- Ramey-Gassert, L., Walberg III, H.J., & Walberg, H.J. (1994). Reexamining connections: Museums as science learning environments. *Science Education*, 78 (4), 345-363.
- Rennie, L.J., & Williams, G.F. (2006). Communication about science in a traditional museum: Visitors' and staff's perceptions. *Cultural Studies of Science Education*, 1 (4), 791-820.
- Russell, R.L. (1996). The role of science museums in teacher education. *Informal Science Review*, 19, 16.
- Tal, T., & Morag, O. (2007). School visits to natural history museums: Teaching or enriching? *Journal of Research in Science Teaching*, 44 (5), 747-769.

Author:

Gary M. Holliday, PhD
The University of Akron
Department of Curricular and Instructional Studies
Zook Hall, Room 314
Akron, OH 44325-4205
Office (330) 972-7437

Dr. Gary M. Holliday is Associate Professor of Science Education in the Department of Curricular and Instructional Studies in the LeBron James Family Foundation College of Education at the University of Akron in Ohio. He earned both his M.Ed. and his Ph.D. in Science Education. His dissertation addressed the impact of professional development in informal science contexts on teachers' content knowledge and discourse. During his five years as a graduate research assistant at the Illinois Institute of Technology, he studied under and was mentored by major professors Dr. Judith Lederman and Dr. Norman Lederman.

To date, his research has focused on teacher professional development in informal settings especially addressing the learning of science, nature of scientific knowledge, inquiry, and bridging the informal and K-12 learning environments. He has published in the *International Journal of Science Education* and the *Journal of Science Teacher Education*. He has also co-authored a number of book chapters and has presented his work at professional meetings in the US and in Finland, France, Greece, South Africa, Taiwan, Sweden, and Turkey. In 2014, at the University of Akron, he was honored with the College of Education Outstanding Faculty Teaching Award and, in 2015, with the College of Education Outstanding Faculty Research Award.

Prior to his work as a science teacher educator, Dr. Holliday had 15+ years of experience as a science educator. He has taught high school Biology in Chicago, IL, and his experience with informal education includes work as a science educator at the Museum of Natural History and Planetarium in Providence, RI, as well as the American Museum of Natural History and the New York Aquarium in New York City.

Engagement in Secondary Blended Classrooms

Lauren Angelone, Ph.D. and Alex Scrimshire, Ph.D.

* Correspondence:

Lauren Angelone, PhD
Xavier University
Hailstones 311
3800 Victory Parkway
Cincinnati, OH 45207
angelonel@xavier.edu
513-745-4222 (office)
Full list of author
information is available at
the end of the article

Abstract:

Blended learning is an instructional strategy that utilizes elements of both online and face-to-face components in an effort to personalize the learning experience. Early research on blended learning is promising, but more empirical work is needed at the K-12 level. In this quantitative study, perceptions of student engagement in blended learning classrooms is compared to engagement in more traditional classrooms at two suburban public high schools in the Midwest. The findings indicate that students are more engaged and less disaffected in blended classes than they are in more traditional classes.

Introduction

Though “[t]here is no generally accepted definition of blended learning” (Picciano, 2014, p. 3), at the K-12 level, it has been largely defined by the Clayton Christensen Institute.

The definition of blended learning is a formal education program in which a student learns: (1) at least in part through online learning, with some element of student control over time, place, path, and/or pace; (2) at least in part in a supervised brick-and-mortar location away from home; (3) and the modalities along each student’s learning path within a course or subject are connected to provide an integrated learning experience (Blended Learning, n.d.).

Essentially, blended learning is the integration of the online learning experience into a formal school environment. In a blended environment, teachers strive to provide the best of both worlds. The face-to-face portions of class time are spent working individually with students, allowing students to engage and socialize with other learners, and providing a common space that encourages learning in more personalized ways.

. The online portions of class serve to support personalization not possible with a single human instructor. Working online can allow students to take more or less time on a specific assignment/module as needed, work with adaptive tools that provide immediate feedback, or choose among a variety of modules that teach the same content in ways that serve different types of learners.

Review of the Literature

Blended learning has received attention for improving student outcomes at the K-12 level. In a US Department of Education (2009) meta-analysis, blended learning outcomes were highest when compared to purely online learning and purely face-to-face instruction, with purely face-to-face instruction earning the lowest marks. Increased time with the material and increased opportunities for collaboration seem to be key indicators of the advantage of the blended environment. In a similar meta-analysis, Means, Toyama, Murphy, and Baki (2013) report a significant advantage of blended instruction over face-to-face citing the same indicators of increased time and collaboration.

According to one study funded through an Alfred P. Sloan Foundation grant, not only have online and blended learning been growing exponentially, but “online and blended learning are becoming integral to a number of high school reform efforts, especially with regard to improving graduation rates, credit recovery, building connections for students to their future college careers, differentiating instruction, and supporting cost-efficiency for instruction” (Picciano, Seaman, Shea and Swan, 2011, p. 135). This new pedagogy and the outcomes and efficiencies that support its use have also incited a provision in the Ohio operating standards (Ohio Legislative Service Commission, 2012), which include regulations to support and

implement blended learning. As such, new models of blended learning implementation are becoming more prevalent in Ohio. These models, while based on sound pedagogy in traditional environments, are still taking shape and need further investigation to determine the sorts of impacts of blending online and traditional instruction. Picciano et al. (2011) submit that the issue of quality in online and blended learning programs should be investigated with particular attention to the benefits, concerns, and costs of such programs (p. 135).

Engagement is an indicator of student achievement and the retention of at-risk students, and because student engagement reaches its lowest levels in high school (Fredericks, McColskey, Meli, Mordica, Montrosse, & Mooney, 2011), this study compares the engagement of secondary students in traditional and blended learning classroom environments to understand if blended learning is an approach that can enhance student engagement, which in turn, can enhance achievement and retention. Among the literature on blended learning there is a dearth of K-12 examples (Daley, Hillaire, & Sutherland, 2016). Of the top-cited publications reviewed by Halverson, Graham, Spring, Drysdale, & Henrie (2014), only 1.8% focused on the K-12 arena. More often, blended learning has been studied in higher educational institutions (Bower, Dalgarno, Kennedy, Lee, & Kenney, 2015; Halverson, et al., 2014). According to Henrie, Halverson, and Graham (2015), “Determining how to best use people and technology to engage learners in meaningful and effective learning experiences is an important endeavor for researchers today” (p. 37).

Theoretical Framework

In this study, engagement is conceptualized as “children’s constructive, focused, enthusiastic participation in the activities of classroom learning” (Skinner, Kindermann, and Furrer (2008, p. 1). It is also distinguished from disaffection and composed of behavioral and

emotional components. For example, behavioral engagement (e.g. I pay attention, I participate in class discussions) is distinguished from behavioral disaffection (e.g. I just act like I'm working, I do just enough to get by) and emotional engagement (e.g. Class is fun, I enjoy learning new things) is distinguished from emotional disaffection (e.g. I feel bored, Class is not at all fun for me). The Engagement vs. Disaffection with Learning Scale: Student Survey (Appendix A) is used to measure behavioral and emotional engagement and disaffection.

Research Question

The purpose of this study is to measure the impact of blended learning in secondary classrooms in terms of student engagement. The main research questions under study are:

- How do blended learning secondary classrooms compare to traditional secondary classrooms in terms of student engagement?
- How does engagement vary by student level, subject, and model of blended learning?

Methods

This is a quantitative study utilizing a validated survey instrument. Students were given the Engagement versus Disaffection with Learning Scale (Skinner, Kindermann, & Furrer, 2009) to assess their engagement in one blended classroom and one traditional classroom. This scale is a likert-style survey with questions rated from 1-4 (4 being the most engaging or most disaffecting). A total of 136 students participated in the research, which was 30% of students in blended classes. Survey responses were then averaged by type of engagement or disaffection and disaggregated by student level, subject, and model of blended learning and then compared.

Context

All 453 students in blended classes at Anderson High School and Turpin High School in Cincinnati, Ohio were asked to participate in this study. Both high schools are in the Forest Hills

School District, a suburban public school district with approximately 7,600 students in grades Preschool-12. Students who chose to participate took one Engagement versus Disaffection with Learning survey for the blended class in which they are currently enrolled and another Engagement versus Disaffection with Learning survey for a more traditional class, defined as a classroom where little technology was used to enhance learning and was mostly teacher-led.

At Anderson and Turpin High Schools, teachers are using four different models of blended learning. The Station Rotation model is the most common. In the Station Rotation model, students rotate between “stations” of traditional content to “stations” of online content. The Flex model is a model of blended learning in which a core of online content provides the backbone of the course. Students work through the material at their own pace with teacher(s) in the room to answer questions and reteach as necessary. The Flipped model of blended learning is one in which the lecture portion of the course is recorded by the teacher and placed online as homework so that class time can be used to grapple with difficult problems alongside of the teacher and other students. The 4/1 model is unique to Forest Hills and was developed by the researcher. In the 4/1 model, students learn in a more traditional environment four days per week and content is put online one day per week in order to free up class time for other learning opportunities that might include internships, volunteering, or interdisciplinary project. The teacher using the 4/1 model made use of her one online day of instruction to allow students to work on a project of their choosing.

Results

Surveys

Overall, students in blended classes are more engaged and less disaffected than students in more traditional classes. A total of 136 students agreed to participate, which was 30% of

students in blended classes. At a confidence level of 95%, the survey margin of error is in line with research standards at 7.04%. Of the four categories for engagement or disaffection, while behavioral engagement did show an improvement, it was not a statistically significant improvement using a two sample t-test. Behavioral disaffection, emotional engagement, and emotional disaffection, however, were statistically significant improvements.

All categories showed an improvement, however behavioral engagement was not a statistically significant difference (See Table 1). Behavioral engagement includes behaviors such as paying attention in class and participating in class discussion. Behavioral disaffection, however, dropped 7.28% in blended classes. Behavioral disaffection includes behaviors such as just acting like they are working or doing just enough to get by. Emotional engagement increased by 9.00% and emotional disaffection dropped by 10.06% in blended classes. Emotional engagement includes feelings such as “Class is fun” or “I enjoy learning new things” whereas emotional disaffection includes feelings such as “I feel bored” or “Class is not at all fun for me.”

Table 1

Overall Approach Summary Pivot

<u>Approach</u>	<u>Average of Behavioral Engagement</u>	<u>Average of Emotional Engagement</u>	<u>Average of Behavioral Disaffection</u>	<u>Average of Emotional Disaffection</u>
Blended	3.38	3.24	1.83	1.68
Traditional	3.35	2.96	1.97	1.86
Total	3.36	3.11	1.90	1.77

When comparing the models of blended learning, the station rotation model and the 4/1 model had the highest levels of engagement (See Table 2). The Station Rotation model had the highest behavioral engagement levels at 3.43 and the lowest behavioral disaffection levels at 1.77. The 4/1 model had the highest emotional engagement level at 3.31 and the lowest emotional disaffection levels at 1.61. Traditional classes had the highest behavioral and emotional disaffection scores at 1.97 and 1.86 respectively, meaning that students are most

disengaged in these types of classes. The Flex model had the lowest emotional engagement level at 2.93, but there were only 10 data points for this model.

Table 2

Overall Models Pivot

<u>Model</u>	<u>Average of Behavioral Engagement</u>	<u>Average of Emotional Engagement</u>	<u>Average of Behavioral Disaffection</u>	<u>Average of Emotional Disaffection</u>
4/1 Model	3.26	3.31	1.94	1.61
Flex Model	3.27	2.93	1.84	1.67
Flipped Instruction	3.38	3.27	1.88	1.79
Station Rotation	3.43	3.26	1.77	1.65
Traditional	3.35	2.96	1.97	1.86
Total	3.36	3.11	1.90	1.77

At Anderson and Turpin High Schools, there are generally four levels of academic courses. The Advanced Placement courses are those in which students will take the AP exam to earn college credit. Honors courses are for more advanced students. College Prep classes are for typical students who plan on going to college. General classes are for students in need of some remediation. In this data, General students were left out of the analysis because there were only 3 data points.

When comparing student engagement between the different levels of academic courses Advanced Placement students were the most emotionally engaged and Honors students were the most behaviorally engaged (See Table 3). Advanced placement students had the highest emotional engagement level at 3.40 and the lowest emotional disaffection level at 1.56. Honors students had the highest behavioral engagement level at 3.49 and the lowest behavioral disaffection at 1.76. College Prep students were the least engaged and the most disaffected of the three groups.

Table 3

Overall Levels Pivot

<u>Model</u>	<u>Average of Behavioral Engagement</u>	<u>Average of Emotional Engagement</u>	<u>Average of Behavioral Disaffection</u>	<u>Average of Emotional Disaffection</u>
--------------	---	--	---	--

	<u>Engagement</u>	<u>Engagement</u>	<u>Disaffection</u>	<u>Disaffection</u>
Blended				
Advanced Placement	3.42	3.40	1.78	1.56
College Prep	3.37	3.09	1.78	1.70
Honors	3.32	3.19	1.94	1.89
Traditional				
Advanced Placement	3.38	3.03	1.94	1.82
College Prep	3.16	2.80	2.22	1.94
Honors	3.49	3.01	1.76	1.89

The blended classes at Anderson and Turpin High Schools were either Math or Science courses. Disaggregating by subject, blended Science classes are more engaging than blended Math classes, but taken together, traditional classes are less engaging than blended classes (See Table 4). Blended Science classes show the highest levels of engagement and the lowest levels of disaffection in all categories. Traditional Science classes show the lowest levels of behavioral and emotional engagement and the highest level of emotional disaffection.

Table 4

Overall Subject Pivot

<u>Model</u>	<u>Average of Behavioral Engagement</u>	<u>Average of Emotional Engagement</u>	<u>Average of Behavioral Disaffection</u>	<u>Average of Emotional Disaffection</u>
Blended				
Math	3.32	2.95	1.85	1.81
Science	3.40	3.35	1.82	1.64
Traditional				
Math	3.32	2.80	1.85	1.90
Science	3.23	2.84	2.07	1.94

Discussion

According to the data in this study, high school students are more engaged in blended classes than in traditional classes. This is an important contribution to the literature on K-12 blended environments as it supports and extends previous research. Though this study does not show a positive outcome in terms of student achievement, engagement is known to be a key indicator of student achievement and retention. In addition, it begins a conversation around engagement in K-12 blended environments.

Limitations

The limitations of this study are partly due to the limited context. This study takes place within one suburban public school district, so generalizations should be carefully considered. The number of students permits generalization to the school populations, but not more broadly. In addition, general level students participated at a much lower rate, which provided a limited picture of their engagement in blended environments.

Recommendation for Future Research

The main area of need in blended learning research is more work in the K-12 arena. There is much more research on blended learning in higher education, but the contexts, especially the structure within each context, vary enough that what has been learned in higher education may not be easily translated to K-12. It is also recommended that engagement be more fully understood in order to understand what it is about blended setting that makes them more engaging and less disaffecting. Qualitative studies of blended environments could help achieve this goal. Blended learning continues to show promise when compared to traditional instruction and purely online instruction (US Department of Education, 2009; Means, et al., 2013), but more research is needed to understand those outcomes.

Conclusion

K-12 blended learning is an area in need of both exploratory and empirical studies. The promise of increased engagement and decreased disaffection found in this study is in agreement with of the preliminary work in the field, as well as the emerging research in higher educational settings. As teachers and school districts begin to implement blended learning, research must also be translated into best practices to guide practitioners at the classroom level.

References

- Blended Learning. (n.d.). Retrieved February 05, 2018, from <https://www.christenseninstitute.org/blended-learning/>
- Bower, M., Dalgarno, B., Kennedy, G. E., Lee, M. J., & Kenney, J. (2015). Design and implementation factors in blended synchronous learning environments: Outcomes from a cross-case analysis. *Computers & Education*, *86*(1), 1–17.
- Daley, S. G., Hillaire, G., & Sutherland, L. M. (2016). Beyond performance data: Improving student help seeking by collecting and displaying influential data in an online middle-school science curriculum. *BJET British Journal of Educational Technology*, *47*(1), 121–134.
- Fredricks, J., McColskey, W., Meli, J., Mordica, J., Montrosse, B., & Mooney, K. (2011). Measuring student engagement in upper elementary through high school: A description of 21 instruments. *Issues and Answers Report*, *098*, 26–27. Retrieved from http://ies.ed.gov/ncee/edlabs/regions/southeast/pdf/rel_2011098.pdf
- Fredricks, J. A., Blumenfeld, P. C., and Paris, A. (2004). School engagement: Potential of the concept: State of the evidence. *Review of Educational Research*, *74*, 59–119.
- Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, *2*(2-3), 87-105.
- González-Gómez, D., Jeong, J. S., Airado Rodríguez, D., & Cañada-Cañada, F. (2016). Performance and perception in the flipped learning model: An initial approach to evaluate the effectiveness of a new teaching methodology in a general science classroom. *Journal of Science Education and Technology*, *25*(3), 450–459.
- Henrie, C. R., Halverson, L. R., & Graham, C. R. (2015). Measuring student engagement in technology-mediated learning: A review. *Computers & Education*, *90*, 36–53.
- Halverson, L. R., Graham, C. R., Spring, K. J., Drysdale, J. S., & Henrie, C. R. (2014). A thematic analysis of the most highly cited scholarship in the first decade of blended learning research. *The Internet and Higher Education*, *20*(2), 20–34.

- Hoxie, A., Stillman, J., & Chesal, K. (2014). Blended learning in New York City: The iLearnNYC program. In A.G. Picciano, C.D. Dziuban, and C.R. Graham (Eds.), *Blended Learning: Research perspectives, volume 2* (pp. 204-324). New York: Routledge.
- Means, Toyama, Murphy and Baki (2013). The Effectiveness of online and blended learning: A meta-analysis of the empirical literature. *Teacher College Record, 115*, 1-47.
- Ohio Legislative Service Commission. (2012). Am. Sub. S.B. 316. Retrieved from <http://www.lsc.ohio.gov/analyses129/12-sb316-129.pdf>
- Picciano, Anthony G. (2014). Introduction to blended learning: Research perspectives, Volume 2. In A.G. Picciano, C.D. Dziuban, and C.R. Graham (Eds.), *Blended Learning: Research perspectives, volume 2* (pp. 1-9). New York: Routledge.
- Picciano, Seaman, Shea and Swan (2012). Examining the extent and nature of online learning in American K-12 Education: The research initiatives of the Alfred P. Sloan Foundation. *The Internet and Higher Education, 15*, 127–135.
- Skinner, E. a., Kindermann, T. a., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection. *Educational and Psychological Measurement, 69*(3), 493 – 525.
- Stacker, H. (2011). The rise of K-12 blended learning: Profiles of emerging models. Retrieved from <http://www.christenseninstitute.org/wp-content/uploads/2013/04/The-rise-of-K-12-blended-learning.emerging-models.pdf>
- US Department of Education. (2009). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. Retrieved from <http://files.eric.ed.gov/fulltext/ED505824.pdf>

Appendix A

Engagement vs. Disaffection with LearningStudent-report*Behavioral Engagement*

1. I try hard to do well in school.
2. In class, I work as hard as I can.
3. When I'm in class, I participate in class discussions.
4. I pay attention in class.
5. When I'm in class, I listen very carefully.

Behavioral Disaffection

6. When I'm in class, I just act like I'm working. (-)
7. I don't try very hard at school. (-)
8. In class, I do just enough to get by. (-)
9. When I'm in class, I think about other things. (-)
10. When I'm in class, my mind wanders. (-)

Emotional Engagement

11. When I'm in class, I feel good.
12. When we work on something in class, I feel interested.
13. Class is fun.
14. I enjoy learning new things in class.
15. When we work on something in class, I get involved.

Emotional Disaffection

16. When we work on something in class, I feel bored. (-)
(When I'm doing work in class, I feel bored. (-))
(When my teacher first explains new material, I feel bored. (-))
17. When I'm in class, I feel worried. (-)
(When we start something new in class, I feel nervous. (-))
(When I get stuck on a problem, I feel worried. (-))
18. When we work on something in class, I feel discouraged. (-)
19. Class is not all that fun for me. (-)
20. When I'm in class, I feel bad. (-)
(When I'm working on my classwork, I feel mad. (-))
(When I get stuck on a problem, it really bothers me. (-))
(When I can't answer a question, I feel frustrated. (-))

Note. Items in parentheses can be used to obtain a more differentiated assessment of disaffected emotions (i.e., bored, worried, and frustrated).

Authors:

Lauren Angelone, PhD
Alex Scrimshire, PhD
Xavier University
Hailstones 311
3800 Victory Parkway
Cincinnati, OH 45207
angelonel@xavier.edu
513-745-4222 (office)

Lauren Angelone, Ph.D. is an assistant professor of science education and instructional technology in the College of Professional Sciences at Xavier University. Angelone received a Ph.D. in Cultural Foundations, Technology, and Qualitative Inquiry from Ohio State University. Her research focuses on blended learning and qualitative research.

Alex Scrimshire, Ph.D. is an assistant professor of management in the Williams College of Business at Xavier University. Scrimshire received a Ph.D. in Business Administration at Oklahoma State University. His research focuses on employee engagement, perspective-taking, and the psychological capital of employees.

PUBLICATION GUIDELINES

for the OHIO Journal of Teacher
Education

The following guidelines are presented for publication opportunities for OJTE (the OHIO Journal of Teacher Education).

The OHIO Journal of Teacher Education provides a forum for the exchange of information and ideas concerning the improvement of teaching and teacher education. Articles submitted should reflect this mission. Their focus should concern concepts, practices, and/or results of research that have practical dimensions, implications, or applicability for practitioners involved with teacher education. The journal is regional in scope and is sent as a benefit of membership in the Ohio Association of Teacher Education.

Manuscripts are subject to review of the Professional Journal Committee (co-editors and editor consultants). Points of view are those of the individual authors and are not necessarily those of either Association. Permission to reproduce journal articles must be requested from the editors.

MANUSCRIPT GUIDELINES

Content: Journal issues may be “thematic” or “open.” Currently, all future issues are designated “open.”

Length: Manuscripts, including all references, bibliographies, charts, figures, and tables, generally should not exceed 15 pages.

Style: For writing and editorial style, follow directions in the latest edition of the Publication Manual of the American Psychological Association. Omit the author’s name from the title page. Include an 80-100-word abstract.

Please do not use auto-formatting when preparing the manuscript!

Cover page: Include the following information on a separate sheet attached to the manuscript: title of the article; date of submission; author's name, author's terminal degree; mailing address, e-mail address, business and home phone numbers, institutional affiliation; and short biographical sketch, including background and areas of specialization.

Submission: Submissions must be word processed using Microsoft Office Word (Microsoft Excel tables are permitted). Submit the manuscript as an attachment to an e-mail to oatejournal@gmail.com

EDITORIAL PROCEDURES

Authors will be notified of the receipt of the manuscript. After an initial review by the editors, those manuscripts which meet specifications will be sent to reviewers. Notification of the status of the manuscript will take place after the deadline date for each issue. The journal editors will make minor editorial changes; major changes will be made by the author prior to publication. Manuscripts, editorial correspondence, and questions can be directed to Dr. Mark Meyers and Dr. Jean Eagle at oatejournal@gmail.com

IMPORTANT DATES OF NOTE:

August 1, 2018	Closing date for acceptance of manuscripts for Spring Journal 2017
Publication Date:	October, 2018 at OCTEO Conference
January 7, 2019	Closing date for acceptance of manuscripts for Fall Journal 2017
Publication date:	March, 2019 at OCTEO Conference



MEMBERSHIP

Interested in becoming a member of OATE (Ohio Association of Teacher Educators)? Please visit the following website for current information: <https://sites.google.com/site/ohioate/home>

Additionally, information about OCTEO (Ohio Confederation of Teacher Education Organizations), Fall and Spring OCTEO Conferences, and presentational opportunities, can be found at the following site: <http://www.ohioteachered.org>.

Our organization looks forward to your interest in OATE and OCTEO
in 2018.